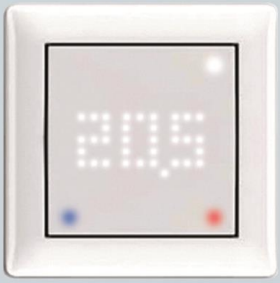
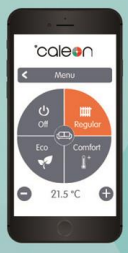
SOREL® Mikroelektronik GMBH

CATALOGUE 2022

Thermal Control Made Simple





www.sorel.de

Dear SOREL customer,

even in turbulent times, we at SOREL remain innovative in order to control your heating and air conditioning systems comfortably and in a way that conserves resources. The daily news of recent months reminds us of the urgency of climate protection, a healthy indoor climate and energy independence.

The new **°C-Lite thermostats** add another exciting component to the modular system for the °CALEONbox system for surface heating and cooling. °C-Lite integrates discreetly into common switch ranges and, with its built-in touch areas, also offers a user interface for setting the desired temperature.

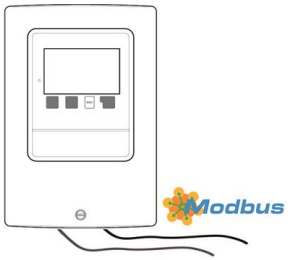
For maximum flexibility, it can be combined in many ways with °CALEON room controllers and the proven room sensors. The integrated multi-sensor with CO2 measurement and **indoor air quality** indication serves the increasing awareness of air quality.

For more details, we recommend taking a look at page 14.

Other highlights:

SHCC Fresh expands our controller series for **heat interface units** especially for the control of decentralised fresh water systems (page 37)

New **cover frames** and surface-mounted frame for surface mounting of the SOREL room sensors as well as the new °C-Lites (page 16)



For OEMs, a steadily growing number of hardware platforms are available for integration into **Modbus** networks. Contact us at **oem@sorel.de**

We wish you a successful year and look forward to actively supporting you in achieving your goals.

Jonas Bicher and Georg Bicher, CEOs

Due to the dynamic material situation, material surcharges may occur in individual cases.

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

CONTENT

HEATING & COOLING

°CALEONbox for Surface Heating Systems 4
°CALEON Room Controllers 10
°C-Lite Thermostat New 14
SOREL Cover Frames New 16
Room Sensors for °CALEONbox 17
°CALEON App 18
°CALEON App Pro 19
Heating Circuit Controllers HCC series 20
MHCC - Medium Heating Controllers 24
LHCC - Large Heating Controller 25
XHCC - XtraLarge Heating Circuit Controller 27
TC -Thermostat Controller 29

FRESH WATER

Fresh Water Controller FWC Series 30
SFWC - Small Fresh Water Controllers 33
MFWC - Medium Fresh Water Controllers 34
LFWC - Large Fresh Water Controllers 35
Cascade function 35

HEAT INTERFACE UNITS

Heat Interface Unit Series 36
SHCC Fresh New 37
HCC Fresh 38
°CALEONbox Fresh 6

SOLAR

Temperature Difference Controller TDC Series 40
STDC - Small Temperature Difference Controller 44
MTDC - Large Temperature Difference Controller 45
LTDC - Large Temperature Difference Controller 47
XTDC- XtraLarge Temperature Difference Controller 49
MTDC-E - Temperature Difference Controller 52
LTDC-E - Temperature Difference Controller 53
Pump groups without TDC controller 54
Pump groups with TDC controller 55
Pool TDC M / M+ Pool Controllers 56

STORAGE LOADING

SLC - Storage Loading Controller 57

HEAT PUMPS

WPC5 - Heat Pump Controller 58

SOREL CONNECT

SOREL Connect - Monitoring and Analysis 59

ACCESSORIES

Temperature sensors 61
1-Wire Sensors for °CALEONbox 62
Immersion sleeves 62
Direct sensors 63
Relays 63
Other accessories 64
Substitutes for controllers of previous series 65

OEM SERVICE

OEM 66
Customization 67
System-Dependent Pre-ParametrIsatIon 71
PC Simulation 71

Legend

Sensor inputs
0-10V or PWM signal
Connectivity Data logger
Connectivity to °CALEON
Room sensor
Potential free relay
Ethernet connection
Connectivity to °CALEONbox
Direct sensors
Zones
LIN Bus
WLAN
Relay outputs with NO contact
Integrated temp. and humidity sensor
Modbus
°CALEON App
Relay outputs with changeover contact
Voltage output for external devices
Connectivity to SOREL Controllers
Max. attainable temperature controller class

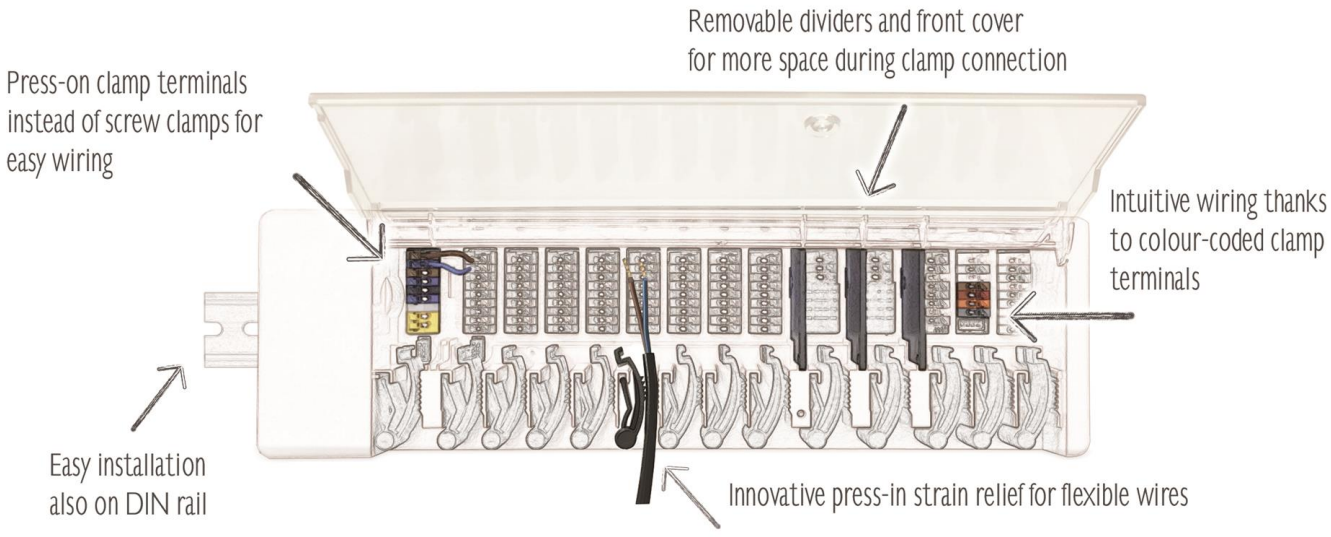
°CALEONbox

Versatile system- and room- controller for surface heating and heat interface units. Especially time-saving installation, with flexible expansion of system possible through use of additional functions for free relays.

°CALEONbox explained in 2 minutes
→ https://youtu.be/puzsUHLCFCU

- Controls up to 8 zones with 1-4 actuators each in 24V or 230V version
- Optional °CALEON Room Controller or 1-Wire sensor can be connected for each zone
- Comfortable system configuration via touch and full text via °CALEON Room Controller. At the same time offers a high-quality room thermostat for the end user.
- Easy maintenance with software updates via WiFi and elegant smartphone app for end users with °CALEON Smart Room Controller
- Built-in setup wizard to facilitate fast and correct commissioning
- Preventive dew point calculation based on relative humidity in the rooms
- Selectable additional functions for free outputs: Weather-compensated mixing circuit, reheating, heating/cooling switchover, dehumidifier, etc. (depending on model)
- Modular system for connecting several °CALEONboxes with each other or with further SOREL controllers. For example, outdoor temperature and heating or cooling requirements are exchanged

Easy installation



Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

Overview

	°CALEONbox	°CALEONbox Clima	°CALEONbox Fresh
Power supply	230VAC	230VAC	230VAC
Internal operating voltage	24VDC, 5VDC, 3.3VDC	24VDC, 5VDC, 3.3VDC	24VDC, 5VDC, 3.3VDC
Relay outputs 230VAC (NO contact)	9	9	9
Relay outputs pot.-free with changeover contact	2	2	2
0-10V or PWM outputs	3	3	3
24VDC voltage output for external devices	✓ max 12W	✓ max 12W	✓ max 12W
LED for operating states	14	14	14
Temperature sensor inputs *1	up to 20	up to 20	up to 20
Grundfos VFS sensor input *5	✗	✗	1
Compatible room controller *3 Compatible room thermostat *4 **NEW**	up to 8 °CALEONs up to 8 °C-Lite	up to 8 °CALEON/°CALEON Clima up to 8 °C-Lite / Clima IAQ	up to 8 °CALEON/°CALEON Clima up to 8 °C-Lite / Clima IAQ
Digital interface *2	2x CAN + 1-Wire	2x CAN + 1-Wire	2x CAN + 1-Wire
Heating pump *6	230VAC on/off / PWM	230VAC on/off / PWM	230VAC on/off / PWM
Heating mixer *7	0-10V or PWM	0-10V or PWM	0-10V or PWM
Heating zones and actuators *8	8 x 4	8 x 4	8 x 4
Heat request *9	✓	✓	✓
Fan coil function via 0-10V/PWM	✓	✓	✓
Heating/cooling switch *9	✗	✓	✓
Cooling request *9	✗	✓	✓
Dehumidifier *10	✗	✓	✓
Heating operating times per day *11	8 per zone	8 per zone	8 per zone
Comfort function for rapid cooling *11	✓ for each zone	✓ for each zone	✓ for each zone
Energy-saving heating mode Eco *11	✓ for each zone	✓ for each zone	✓ for each zone
Cooling operating times per day *11	✗	8 per zone	8 per zone
Comfort function for fast cooling *11	✗	✓ for each zone	✓ for each zone
Energy-saving cooling mode Eco *11	✗	✓ for each zone	✓ for each zone
Internet access via °CALEON smart *12	✓	✓	✓
Dew point calculation *13	✗	✓	✓
PID control for constant room temperature	✓	✓	✓
Circulation pump operation	✗	✗	✓

*1 by 1-wire bus up to 20 sensors, additional temperature sensors by CAN network

*2 two separate CAN networks, 1x private (appartment), 1x heating system (building)

*3 up to 8 °CALEON can be supplied with 24VDC by °CALEONbox. When connecting more °CALEONs, an additional power supply is required. Alternatively, an external 230VAC thermostat can be operated for each zone.

*4 up to 8 °C-Lites can be supplied by the °CALEONbox with 5V DC operating voltage from the 1-Wire bus

*5 for measuring tap temperature and flow for domestic hot water control

*6 via 230VAC relays on/off, or speed-controlled via PWM

*7 Flow temp. control is done according to room temp., opt. weather-compensated or combi. of weather-compensation with room temp. influence.

*8 up to 8 heating zones with up to 3x 230VAC actuators as NO or NC design also with PID control

*9 potential-free relay contact, 0-10V or PWM signal or via CAN network

*10 free assignable function on one of the relay or V outputs

*11 adjustable via °CALEON room controller or °CALEON Clima room controller

*12 adjustable via °CALEON smart room controller 24VDC with WiFi

*13 separately in every zone where °CALEON Clima room controller is installed

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

°CALEONbox

°CALEONbox

For surface heating systems in combination with up to 8 °CALEON room controllers.

Inputs / Outputs	Connectivity
20x 1-Wire, 2x 0-10V | PWM, 32x 8-Zones, 9x 230 VAC, 1x Potential-free, 3x 0-10V | PWM, 24VDC 20W	°CALEON

Art. No. 74001 - °CALEONbox				
from quantity	1	5	10	20

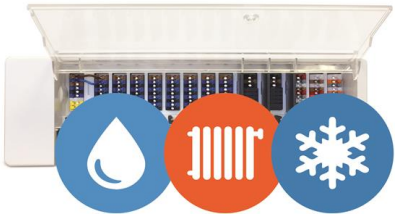
°CALEONbox Clima

For surface heating and cooling systems in combination with up to 8 °CALEON Clima room controllers. The continuous dew point control in each room ensures safe and efficient cooling operation.

Inputs / Outputs	Connectivity
20x 1-Wire, 2x 0-10V | PWM, 32x 8-Zones, 9x 230 VAC, 2x Potenzialfrei, 3x 0-10V | PWM, 24VDC 20W	°CALEON

Art. No. 74002 - °CALEONbox Clima				
from quantity	1	5	10	20

°CALEONbox Fresh



Note: Sales only to manufacturers of fresh water systems.

OEM service: We are happy to contribute our experience from over 10 years of fresh water development in order to optimally adjust all control parameters for your fresh water station - for a fast and stable tap temperature in all common tap profiles.

For surface heating, cooling and decentral fresh water systems with up to 8 °CALEON Room Controllers. The electronic fresh water control provides a stable tapping temperature

Inputs / Outputs	Connectivity
20x 1-Wire, 2x 0-10V | PWM, 32x 8-Zones, 9x 230 VAC, 1x VFS, 2x Potenzialfrei, 3x 0-10V | PWM, 24VDC 20W	°CALEON

Art. No. 74003 - °CALEONbox Fresh				
				on request

Application Examples

The components of the °CALEONbox systems can be flexibly combined. Some possibilities:

Zone control in a single-family house with heat request:

1x °CALEONbox

1x °CALEON

1x Room Sensor 1-Wire per additional room

Zone control in a single-family house with several °CALEON, mixed room thermostats, WiFi and heat request:

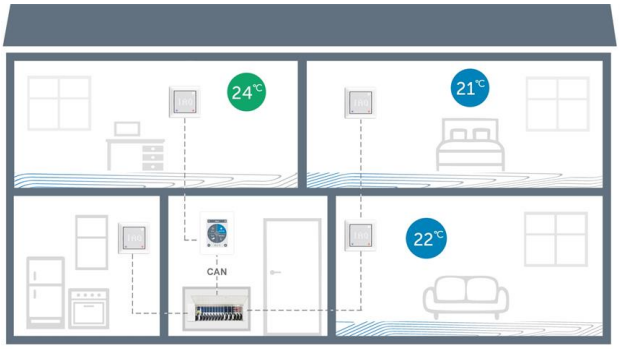
1x °CALEONbox

1x °CALEON Smart (WiFi) GF

1x °CALEON Room Controller UF

1x °C-Lite per additional room

Heating and cooling in the single family house with indication of the air quality (Indoor Air Quality and CO2):



1x °CALEONbox Clima

1x °CALEON Clima

1x °C-Lite Clima IAQ per additional room

Single family house with WiFi room sensors, energy demand, and seasonal change heating/ cooling:

1x °CALEONbox Clima

1x °CALEON Clima Smart (WiFi)

1x Room Sensor Clima Smart per additional room (WiFi)

Heating and cooling in offices/ hotels/ commercial buildings:

1x °CALEONbox per 8 rooms

1x Room Sensor 1-Wire per room

1x °CALEON Clima Room Controller

Multi-family house with decentral fresh water control:

1x °CALEONbox Fresh per apartment

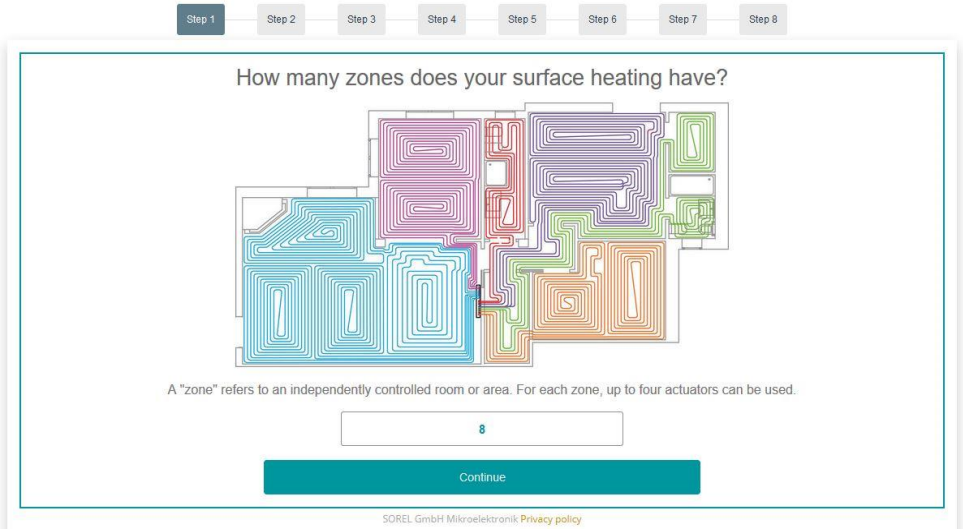
1x °CALEON per apartment

1x Room Sensor 1-Wire per additional room

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

°CALEONbox Configurator

Find the right components for controlling your underfloor heating and cooling system with the °CALEONbox in 7 steps.



Start Configurator:

https://caleonbox.sorel.de

Recommended accessories for °CALEONbox

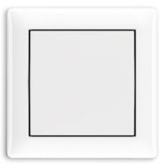
°CALEON Room Controller

→ Page 12

°C-Lite Thermostat

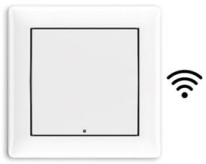
→ Page 14

Room Sensor 1-Wire



→ Page 17

Room Sensor Smart



→ Page 17

HCC Controller

→ Page 22

Additional contents

°CALEONbox explained in 2 minutes

→ https://youtu.be/puzsUHLCFCU

Simplified wiring of controllers for underfloor heating with °CALEONbox

→ https://youtu.be/YI6yCJgI4bs

Controlling large underfloor heating systems

→ www.sorel.de/en/commercial-systems-blog

Requirements of Surface Cooling for the Control Technology

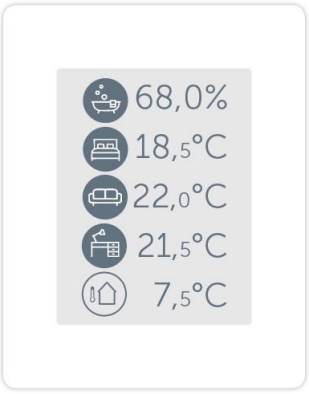
→ www.sorel.de/en/surface-control-blog

Multi-zone control of surface heating with only 1 thermostat

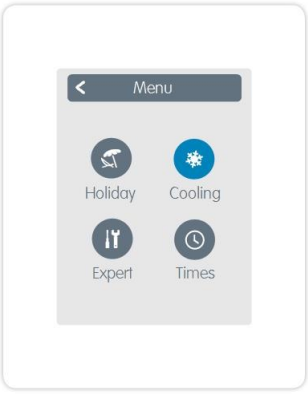
→ www.sorel.de/en/control-1-thermostat-blog

°CALEON Room Controllers

Comfortable touch controller for comfortable remote control of heating and cooling system from the living room with integrated temperature and humidity sensor. Control the heating zones in conjunction with a °CALEONbox and influence the flow temperature with °CALEONbox and HCC controllers. This enables even faster and more precise control of the room temperature for panel heating/cooling, radiators or fan coils.



Room selection with several heating zones



Season switch heating/cooling (Clima)

Adjust operating modes and feel-good temperature

Intuitive time switch for weekly program

Application Examples

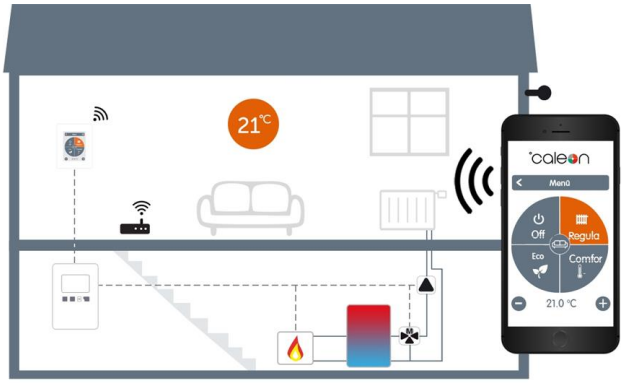
Zone control in a single-family house with several °CALEON, WiFi and heat request:

1x °CALEONbox
1x °CALEON Smart (WiFi)
1x °CALEON per room

Zone control in a single-family house with energy request and season switch heating/ cooling:

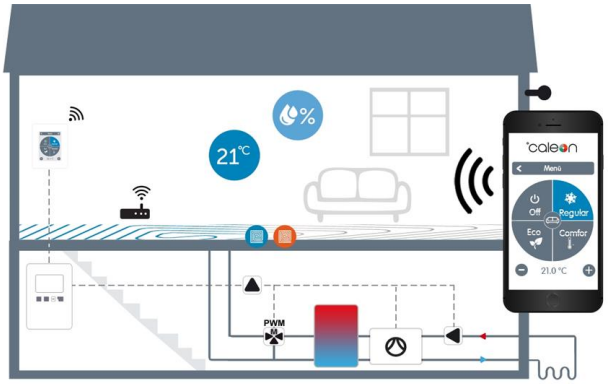
1x °CALEONbox Clima
2x °CALEON Clima
1x Room Sensor 1-Wire per room

Weather-compensated heating circ. with room influence:



1x MHCC
1x °CALEON Smart (WiFi)

Weather-compensated heating circ. for heating and cooling:



1x LHCC
1x °CALEON Smart (WiFi)

Overview

	°CALEON Room Controllers	°CALEON Smart Room Controller
Room temperature 0...60°C, resolution 0.1°C	✓	✓
Relative humidity 0%-100%, resolution 0.1%	✓	✓
Heating operation	✓	✓
Cooling operation	×	×
Power supply	24VDC	24VDC
Switching output	×	×
Heating times per day	8	8
WLAN module N 2.4GhZ for firmware updates and °CALEON App	×	✓
Glass cover with capacitive touch panel	✓	✓
2.8" TFT display with 240 x 320 dots	✓	✓
Housing color / dimensions H x W x D in mm	RAL 9003 / 95 x 75 x 19	RAL 9003 / 95 x 75 x 19
Product details	page 12	page 12

	°CALEON Clima Room Controllers	°CALEON Clima Smart Room Controller
Room temperature 0...60°C, resolution 0.1°C	✓	✓
Relative humidity 0%-100%, resolution 0.1%	✓	✓
Heating operation	✓	✓
Cooling operation	✓	✓
Power supply	24VDC	24VDC
Switching output	2x 0-10V	2x 0-10V
Thermostat function	✓	✓
Dehumidifier function	✓	✓
Season switch function	✓	✓
Fan coil function NEW	✓	✓
Heating times per day	8	8
WLAN module N 2.4GhZ for firmware updates and °CALEON App	×	✓
Glass cover with capacitive touch panel	✓	✓
2.8" TFT display with 240 x 320 dots	✓	✓
Housing color / dimensions H x W x D in mm	RAL 9003 / 95 x 75 x 19	RAL 9003 / 95 x 75 x 19
Product details	page 13	page 13

°CALEON Room Controllers

Room Controllers for remote control and optimisation of the heating system in combination with SOREL heating controllers or °CALEONbox. By influencing the calculation of the flow temperature, they permit an even faster and more precise temperature control.

°CALEON Room Controllers

Elegant room controller with capacitive TFT touch panel for comfortable remote control and optimisation of the heating system in combination with MHCC, LHCC, XHCC or °CALEONbox.

Inputs	Connectivity	Menu Languages
1x	°CALEON, °CALEON box	

Art. No. 70001 - °CALEON Room Controller

from quantity	1	10	20	40

°CALEON Smart Room Controller

Elegant room controller with capacitive TFT touch panel, integrated WLAN module and matching smartphone app for comfortable remote control and optimisation of the heating system in combination with MHCC, LHCC, XHCC and °CALEONbox.

Inputs	Connectivity	Menu Languages
1x	WLAN, °CALEON, °CALEON box, °CALEON App	

Art. No. 70003 - °CALEON Smart Room Controller

from quantity	1	10	20	40

Recommended Accessories

CAN Connection cable

→ Page 60

HCCs

→ Page 22

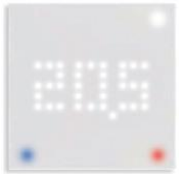
°CALEONbox

→ Page 6

°CALEON App

→ Page 18

°C-Lite Thermostat



→ Page 14

°CALEON Clima Room Controllers

Room Controllers for remote control and optimisation of the heating and cooling system in combination with SOREL heating controllers or °CALEONbox Clima.

°CALEON Clima Room Controllers

Elegant room controller with capacitive TFT touch panel for comfortable remote control and optimisation of the heating system in combination with LHCC, XHCC and °CALEONbox Clima.

Inputs/ Outputs	Connectivity	Menu Languages
1x, 2x 0-10V | PWM	°CALEON, °caleon box	

Art. No. 70002 - °CALEON Clima Room Controller				
from quantity	1	10	20	40

°CALEON Clima Smart Room Controller

Elegant room controller with capacitive TFT touch panel, integrated WLAN module and matching smartphone app for comfortable remote control and optimisation of the heating system in combination with LHCC, XHCC and °CALEONbox Clima.

Inputs/ Outputs	Connectivity	Menu Languages
1x, 2x 0-10V | PWM	WLAN, °CALEON, °caleon box, °CALEON App	

Art. No. 70004 - °CALEON Clima Smart Room Controller				
from quantity	1	10	20	40

Recommended Accessories

CAN Connection cable

→ Page 60

HCCs

→ Page 22

°CALEONbox

→ Page 6

°CALEON App

→ Page 18

°C-Lite Thermostat

→ Page 14

°C-Lite thermostat

Digital room thermostats for surface heating and cooling systems with integrated multisensor and digital communication via 1-Wire bus. Intuitive operation via integrated touch areas and LEDs that blend discreetly into the plastic panel when in standby mode. Continuous monitoring of air quality possible via colored status LED. Versatile installation options for flush mounting in common cover frames or as a surface-mounted variant.

°C-Lite Demo Video
→ https://youtu.be/WJAUYe_CX50

4 in 1 multisensor
Measurement of temperature, relative humidity, Indoor Air Quality (IAQ) and CO2. Display of indoor air quality by means of colored LED.

Touch room thermostat
Thermostat with 3 colored LEDs and intuitive operation via 3 capacitive touch zones.

Connectivity
Digital communication with °CALEONbox via 1-Wire bus. Further interfaces can be realized as OEM version.

Versatile mounting
Integration in common 55mm switch programs possible as flush-mounted variant, as surface-mounted variant or in country-specific cover frames.

	°C-Lite	°C-Lite Clima IAQ
Sensor	Temperature sensor (°C)	4 in 1 (°C, RH, IAQ, CO2eq)
Heating operation	✓	✓
Cooling operation	×	✓
Internal operating voltage	5V DC	5V DC
Power consumption	0.1 W standby | 0.5 W active	0.1 W standby | 0.5 W active
Protection Class	IP20	IP20
Interface	SOREL 1-Wire	SOREL 1-Wire
Display	LED (RGB)	LED (RGB)
Operation	via 3 touch zones	via 3 touch zones

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

Application Examples

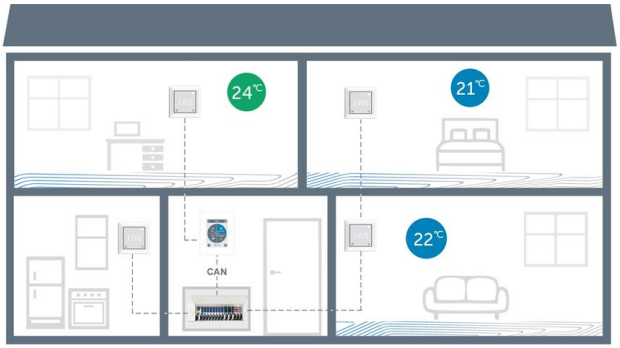
Zone control in a single-family house with Heat request:

1x °CALEONbox
1x °CALEON Room Controller
4x °C-Lite

Single family house with mixed thermostats and seasonal switch heating/ cooling:

1x °CALEONbox Clima
1x °CALEON Room Controller Smart
1x °CALEON Room Controller
1x Room Sensor 1-Wire
2x °C-Lite Clima IAQ

Heating and cooling in the single family house with indication of the air quality (Indoor Air Quality and CO2):



1x °CALEONbox Clima
1x °CALEON Clima
1x °C-Lite Clima IAQ per additional room

Zone control in a single-family house with several °CALEON, WiFi and heat request:

1x °CALEONbox
1x °CALEON Smart (WiFi) GF
1x °CALEON Room Controller UF
1x °C-Lite per additional room

List Prices

Art. No. 75001 - °C-Lite				
from quantity	1	10	20	40

Art. Nr. 75002 - °C-Lite Clima IAQ				
from quantity	1	10	20	40

For OEM customers, °C-Lite represents a versatile product platform with numerous customization options.
Ask for info about the °C-Lite OEM platform at **oem@sorel.de**!

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

SOREL Cover Frames

°C-Lite SOREL Cover Frame

Cover frame for 55mm inserts of SOREL Room Sensor or °C-Lite pure white plastic frame RAL9003, 80mm x 80mm matt eroded surface with UV protection.

Art. No. 82001 - SOREL Cover Frame	
€/per piece	

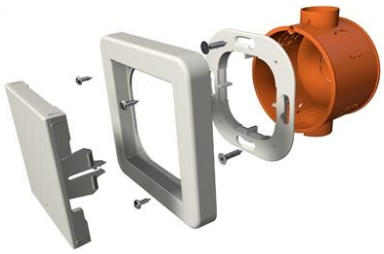
Mounting set SOREL surface-mounted frame with SOREL cover frame

Mounting set consisting of SOREL cover frame and SOREL surface-mounted frame 9mm for 55mm insert °C-Lite, pure white (RAL9003) plastic surface-mounted frame, 80mm x 80mm matt eroded surface with UV protection.

Art. No. 82002 - Mounting set SOREL surface-mounted frame with SOREL cover frame	
€/per piece	

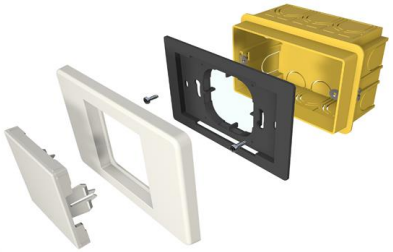
Mounting variants

Flush mount variant



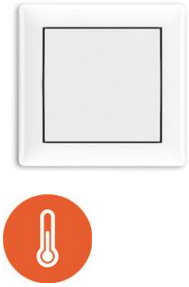
Surface mount variant

Italian variant



Room Sensors for °CALEONbox

Each zone of the °CALEONbox requires either 1 °CALEON or room sensors to enable zoning control. The in-wall variant of the room sensor is compatible with all square 55 mm switch frame systems from common manufacturers such as Gira, Busch-Jaeger, Jung, Berker and Merten.



Room Sensor 1-Wire

Digital room temperature sensor with communication via 1-wire bus in combination with °CALEONbox.

Power supply	3,3 VDC ... 5 VDC SELV or PELV
Measurement range	0 °C ... 60 °C accuracy: +/- 1 °C resolution: 0,1 °C
Protection Class	IP20
Max. cable length	up to 100 m powered (three-wire connection), up to 50 m parasitic (two-wire connection), use twisted pair cable
Dimensions/ Housing	80 mm x 80 mm/ plastic pure white
Installation methods	Flush-mounted switch box / other colour variants available on request

Art. No. 80003 - Room Sensor 1-Wire				
from quantity	1	10	20	40

Room Sensor Clima 1-Wire

Digital room temperature and humidity sensor with communication via 1-wire bus in combination with °CALEONbox.

Power supply	3,3 VDC ... 5 VDC SELV or PELV
Measurement range	0 °C ... 60 °C / 0% ... 100% Accuracy +/- 1 °C / +/- 6 % Resolution 0.1 °C / 0.1 %
Protection Class	IP20
Max. cable length	up to 100 m powered (three-wire connection), use twisted pair cable
Dimensions/ Housing	80 mm x 80 mm/ plastic pure white
Installation methods	Flush-mounted switch box / other colour variants available on request

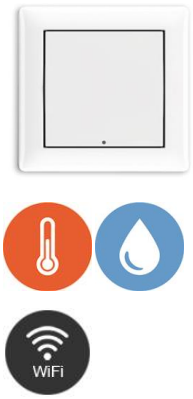
Art. No. 80004 - Room Sensor Clima 1-Wire				
from quantity	1	10	20	40

Room Sensor Smart

Digital room temperature sensor with communication via WLAN in combination with °CALEONbox.

Power supply	230VAC
Measurement range	0 °C ... 60 °C accuracy: +/- 1 °C resolution: 0,1 °C
Protection Class	IP20
Dimensions/ Housing	80 mm x 80 mm/ plastic pure white
Installation methods	Flush-mounted switch box / other colour variants available on request

Art. No. 80103 - Room Sensor Smart				
from quantity	1	10	20	40



Room Sensor Clima Smart

Digital room temperature and humidity sensor with communication via WLAN in combination with °CALEONbox.

Power supply	230VAC
Measurement range	0 °C ... 60 °C / 0% ... 100% Accuracy +/- 1 °C / +/- 6 % Resolution 0.1 °C / 0.1 %
Protection Class	IP20
Dimensions/ Housing	80 mm x 80 mm/ plastic pure white
Installation methods	Flush-mounted switch box / other colour variants available on request

Art. No. 80104 - Room Sensor Clima 1-Wire				
from quantity	1	10	20	40

°CALEON App

The °CALEON app provides secure and convenient remote access to one or more °CALEON smart room controllers. The exact functional range of the app varies with the installed °CALEON version. The °CALEON app is available for free in the Google Play (Android) and Apple App Store (iOS).

Laden im App Store

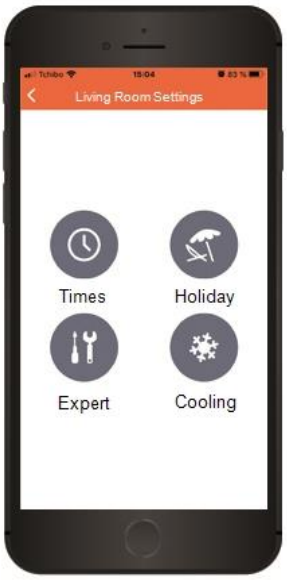
JETZT BEI Google Play

Simple setup via setup wizard

Temperatures and humidity in real time

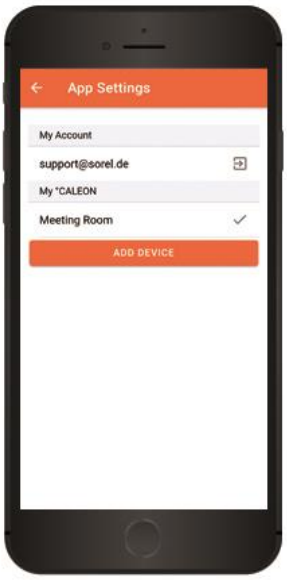
Select operating mode and set target room temperature

Configure time program



Season switch heating/cooling

Activate holiday mode



Access to multiple systems

Service values

°CALEON App	
	Free

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

°CALEON App Pro

Adds full access to the expert menu of the °CALEON Smart Room Controller to the free end customer app.

Offer your customers real added value through professional remote servicing such as:

- Serviced Setup
- Remote control
- or the controlled installation of firmware updates on the °CALEON Smart Room Controller and °CALEONbox.

Each licence provides 1 user (e.g. craftsman or service technician) with full access to any number of installations.

Setup Wizard for commissioning °CALEON and °CALEONbox

Remote parameterisation of all settings

Advanced diagnostic tools

Troubleshooting or for function upgrades

°CALEON App Pro	
Service Abo	
Quick Fix Licence	

Note: the exact price may vary depending on the country and influences of the platform operators.

For personalised OEM apps see page 67 or contact us at oem@sorel.de

Heating Controllers HCC

Heating and system controllers from SOREL: **versatile and user-friendly.** Thanks to the crystal clear user guidance, different types of solar systems can be operated 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 fl exibly.

Multilingual
Various menu languages freely selectable for clear under-standability.

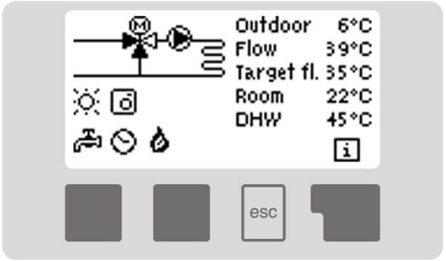
Network-compatible
Controllers can be networked via CAN bus or connected to the internet.

PC Simulation
Free Windows software facil-itates product trainings, per-formance tests and technical support.

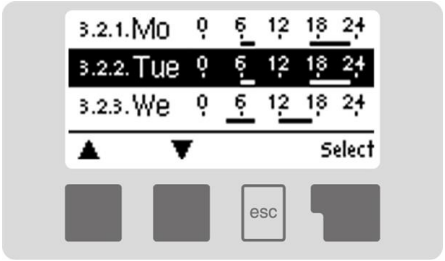
ErP-Bonus
Achieve maximum temperature class VIII with SOREL heating controllers for 5% bonus on the EU energy label calculation.

Operator Guidance

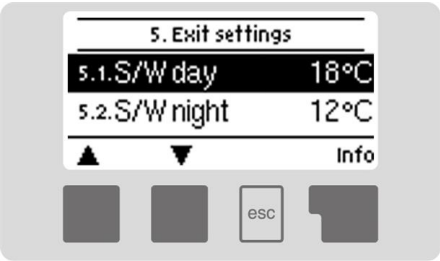
The setup wizard will rapidly guide you through the settings which need to be performed in a logically reasonable sequence. This way, any misadjustment is avoided and the para-metrising is simplified.



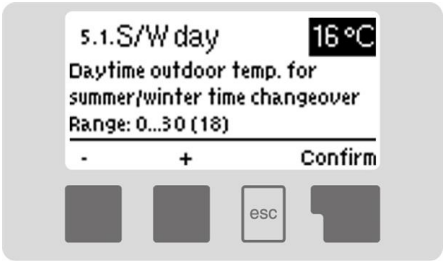
The display of the current measured values and the operating conditions is performed in a graphic mode with animations. Important func-tions are indicated as icons.



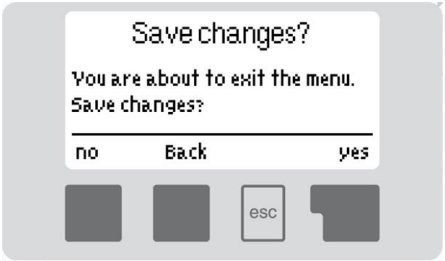
Three operating times can be set per weekday and can be transfered to other days as well.



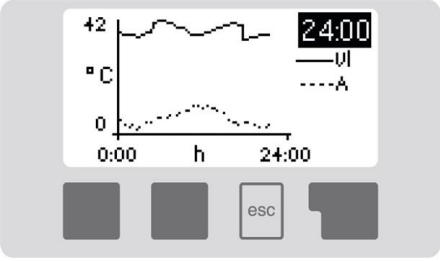
The clear menu offers options for request, ana-lysis and setting.



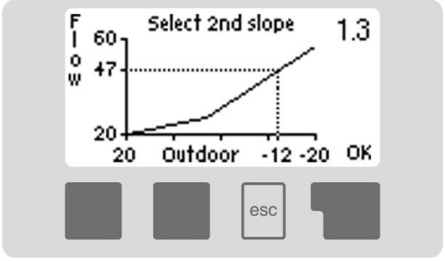
The self explanatory operator guidance allows the simple parametrisation, assisted with func-tional explanations.



Confirmation dialogs and menu block func-tions prevent unwanted misadjustments.



The function control and the long term mon-itoring of the installation is provided by record-ing and evaluating of the data.



The split heating curve is used to produce the most comfortable temperature in different building conditions.

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

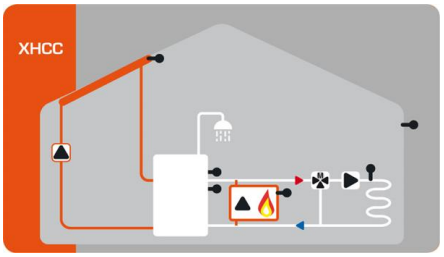
Additional functions for extending predefined schemes

Examples of additional functions

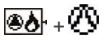
- Temp. Difference
- Booster pump
- Cooling function
- Solar function
- Solid fuel boilers
- Solar bypass
- Burner with pump
- 2nd Heat circuit
- Error message
- Parallel operating
- Circulation
- Relay always on

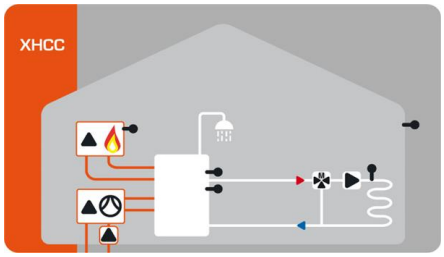
Example:

System 1 + +



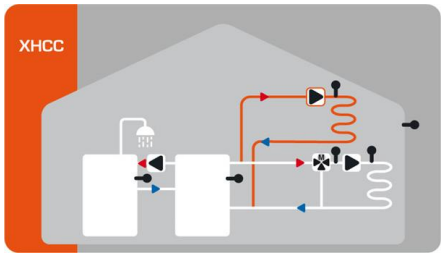
Combined storage tank with mixed heating circuit with additional function solar and additional heating with pump

System 1 + + 



Combined storage tank with mixed heating circuit with additional function, additional heating and heat pump / compressor with brine pump.

System 8 +



Combined storage tank with buffer storage tank with mixed heat circuit with additional function 2nd heating circuit.

Additional function easily adjusted:

1. Select free relay

2. Select additional function

3. Set function

Heating Controllers HCC

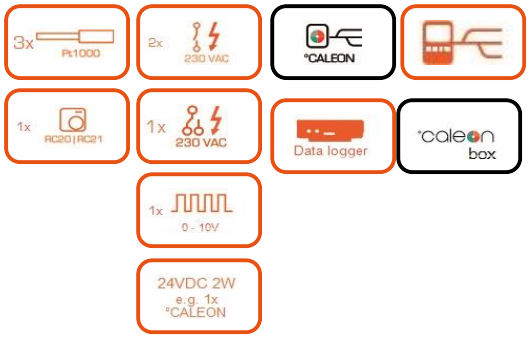
HCC	MHCC
Sensor inputs of which for Pt1000 temperature sensors of which for remote adjuster of which for Direct Sensors VVX / VFS / RPS Temperature of which for Direct Sensors VVX / VFS / RPS flow	4 3 1 0 0
Compatible room thermostat	°CALEON / RC20
Relay outputs 230V	3
Relay output voltage-free	×
Outputs 0..10V or PWM signal (for modulating burner control)	1
24VDC output for external devices	✓ up to 2W
Number of applications	2
Extension of pre-defined systems by selectable additional functions	×
LEDs red/green for display of operating status	✓
Programmable thermostat times and functions per day	3
Comfort function for quick heating	✓
Heating circuit with mixer Heating circuit without mixer	✓ ×
Cooling function for heating circuits	×
Dew point correction in "Cooling" mode	×
Heat pump control	×
Season switch "Heating / Cooling"	×
Cooling function with air conditioning	×
Domestic hot water function with operating times	×
Circulation of domestic hot water with operating times	×
Legionella protecion via additional heating	×
Solar function	×
Setup wizard	✓
Buffer discharge protection	✓
Anti-freeze protection	✓
Seizing Protection	✓
Function control and error memory with date and time	✓
Error memory and analysis with date and time	✓
Input for low energy tariff or PV overproduction (PV contact)	×
Menu blocker	✓
CAN bus connection for SOREL Connect	✓
Data logging on microSD card	via data logger
Ethernet connection	via data logger
Dimensions Height x Width x Depth in mm	163 x 110 x 51
Housing colour	RAL 9003
Protection Class	IP40
Mounting Hardware, Spare Fuse and User Manual	✓
Product details	page 24

LHCC	**XHCC**
10 6 1 2 2	17 11 2 2 2
°CALEON / °CALEON Clima / RC20	°CALEON / °CALEON Clima / RC20
3	6
1	1
2	4
✓ up to 6W	✓ up to 6W
22	13
✓	✓
✓	✓
2 x 3	2 x 3
✓	✓
0 - 2 0 - 2	0 - 2 0 - 2
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
✓	✓
via data logger	✓
via data logger	✓ (only at V2)
163 x 110 x 51	228 x 180 x 53
RAL 9003	RAL 9003
IP40	IP40
✓	✓
page 25	page 27

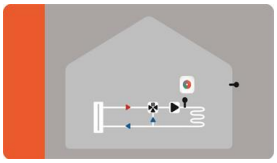
MHCC - Medium Heating Controllers

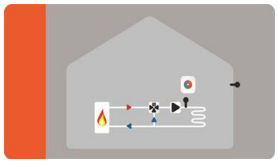
Weather-compensated heating controller for a mixed circuit with heat request.

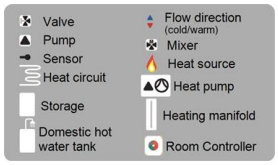
Inputs / Outputs	Connectivity	Menu Languages



Hydraulic variants MHCC







Recommended Accessories

°CALEON Room Controller

→ Page 12

Data logger

→ Page 60

Temperature sensors Pt1000

→ Page 61

External switching relay 0-10VDC

→ Page 63

Outdoor sensor TA55

→ Page 61

List Prices

Art. No. 23001 - MHCC				
from quantity	1	5	10	20

Art. No. 23201 - MHCC Set with 2 Pt1000 sensors (TR/ S2 and TA55)				
from quantity	1	5	10	20

Art. No. 23301 - MHCC Set with 3 Pt1000 sensors (TT/ S4, TR/ S2 and TA55)				
from quantity	1	5	10	20

Art. No. 23311 - MHCC Set with 3 Pt1000 sensors (TT/ S4, TR/ S2 und TA55) and external relay 1W 6A				
from quantity	1	5	10	20

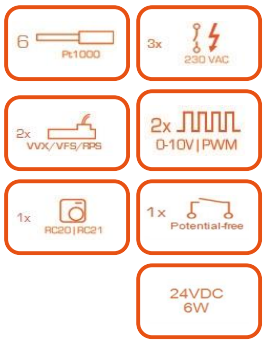
Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

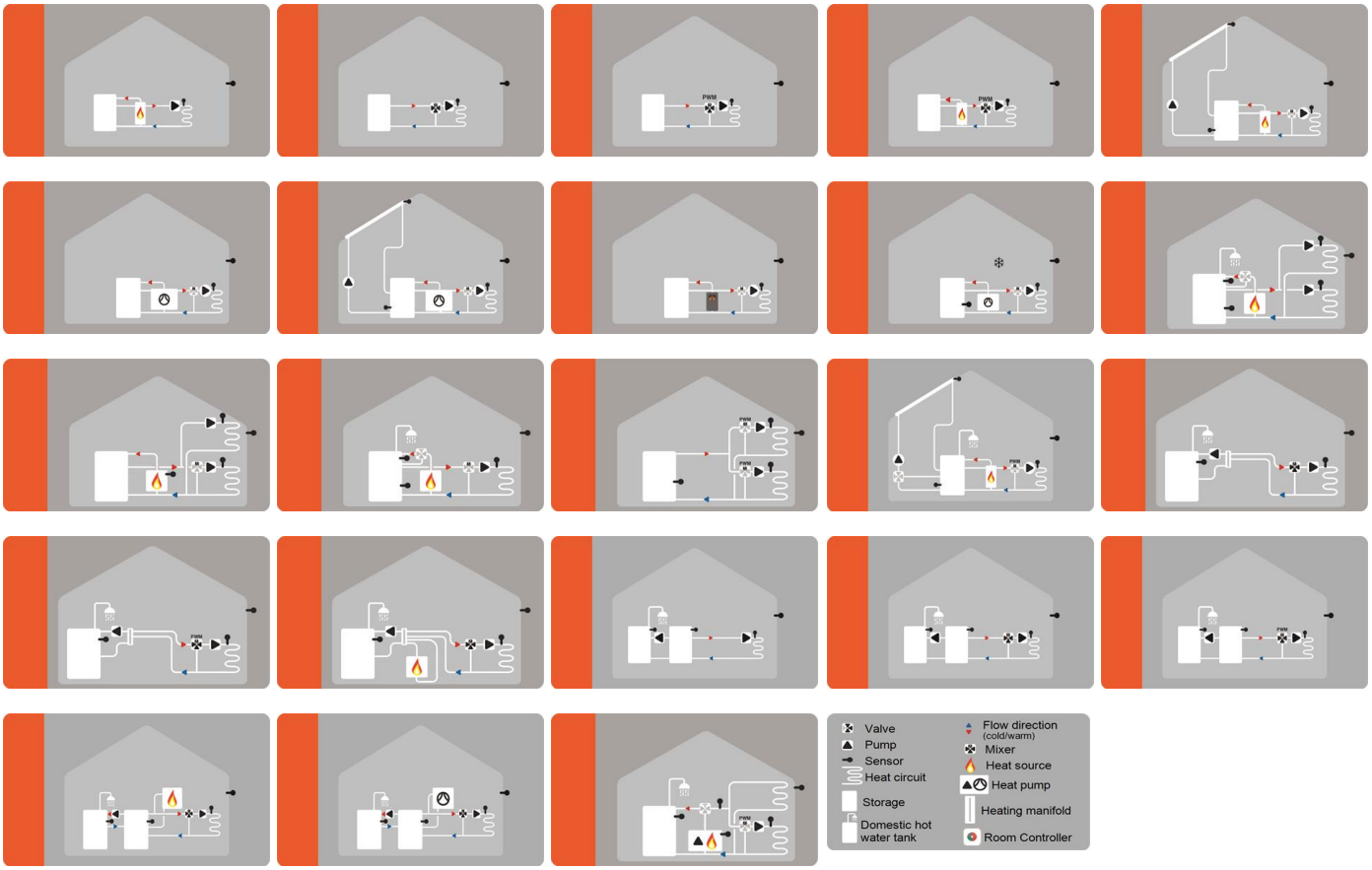
LHCC - Large Heating Controller

Weather-compensated heating controller for up to two mixed heating and cooling circuits as well as free assignable functions for unused relays.

Inputs / Outputs	Connectivity	Menu Languages



Hydraulic variants LHCC



Recommended Accessories

°CALEON Room Controller

→ Page 12

°CALEON Clima Room Controller

→ Page 13

Data logger

→ Page 60

CAN connection set

→ Page 60

Temperature sensors Pt1000

→ Page 61

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

List Prices

Art. No. 27005 - LHCC				
from quantity	1	5	10	20

Art. No. 27305 - LHCC Set with 3 Pt1000 sensors TR/ S2, TA55 and TT/ S4				
from quantity	1	5	10	20

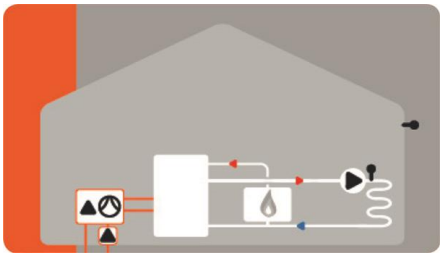
Art. No. 27315 - LHCC Set with 3 Pt1000 sensors TR/ S2, TA55, TT/ S4 and external relay 1W 6A				
from quantity	1	5	10	20

LHCC - Additional functions for free relays

- Thermostat
- Return flow increase
- Transfer
- Difference
- Solid fuel boilers
- Free Cooling
- Dehumidifier
- Error message
- Pressure monitoring
- Parallel operating with R1
- Parallel operating with R2
- Always on
- Heat circuit 1/ 2
- Solar
- Burner
- Compressor
- Boiler pump
- Remote
- HP Compressor
- DHW Valve
- Cooling Valve
- Circulation
- Heating rod
- RLA Mixer
- Dissipation
- Season Switch

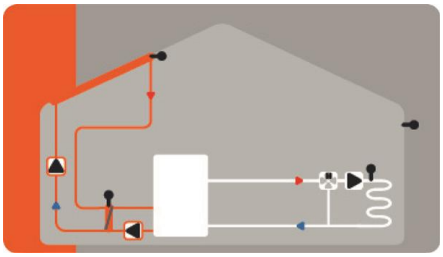
Example:

System 1 +



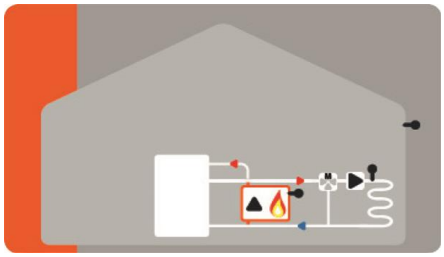
Combined storage with heating circuit with additional functions glycol pump and compressor.

System 2 + +



Combined storage with mixed heating circuit with additional functions solar and heat exchangers.

System 8 +



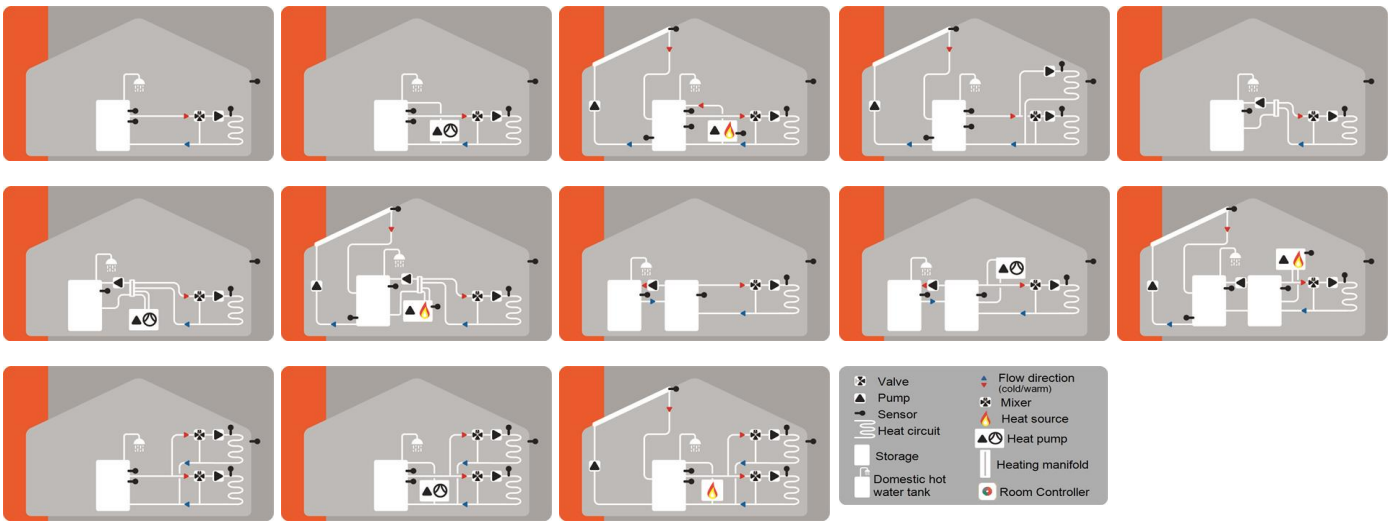
Combined storage or buffer storage with mixed heating circuit with additional function burner and boiler pump.

XHCC - XtraLarge Heating Circuit Controller

Weather-compensated heating controller for complex systems with up to two mixed heating and cooling circuits, different heat sources and free assignable functions for unused relays.

Inputs / Outputs	Connectivity	Menu Languages

Hydraulic variants XHCC



Recommended Accessories

°CALEON Room Controller	°CALEON Clima Room Controller	System-Dependent Pre-Parametrisation	Temperature sensors Pt1000	Immersion sleeves
→ Page 12	→ Page 13	→ Page 71	→ Page 61	→ Page 62

List Prices

Art. No. 28001 - XHCC without Ethernet				
from quantity	1	5	10	20

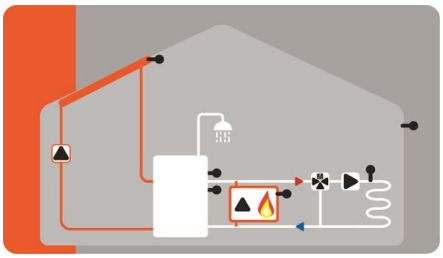
Art. No. 28002 - XHCC with Ethernet				
from quantity	1	5	10	20

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

XHCC - Additional functions for free relays

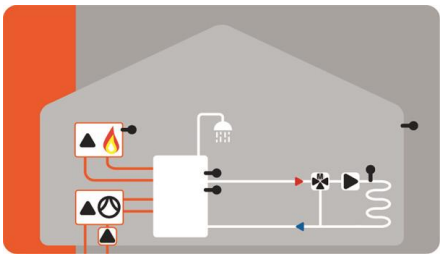
- Thermostat
- Mixer
- Return flow increase
- Transfer
- Difference
- Solid fuel boilers
- Error message
- Free Cooling
- Dehumidifier
- Pressure monitoring
- Parallel operating with R1
- Parallel operating with R2
- Always on
- Heat circuit 1/ 2
- Solar
- Burner
- Compressor
- Remote 1/ 2
- HP Compressor
- DHW Valve
- Cooling Valve
- Circulation
- Heating rod
- RLA Mixer
- Dissipation
- Season Switch

System 1 +



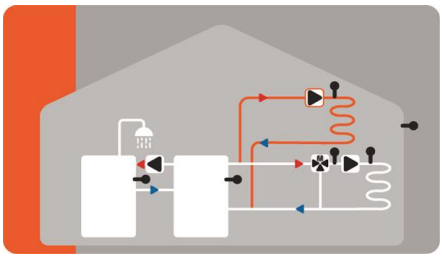
Combined storage tank with mixed heating circuit with additional function solar and additional heating with
pump.

System 2 +



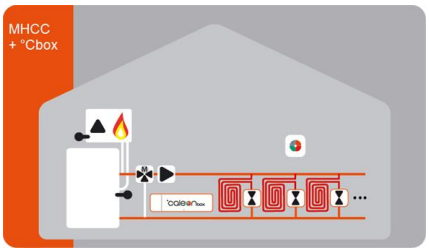
Combined storage tank with mixed heating circuit with additional function, additional heating and heat pump / compressor with brine pump.

System 8 +

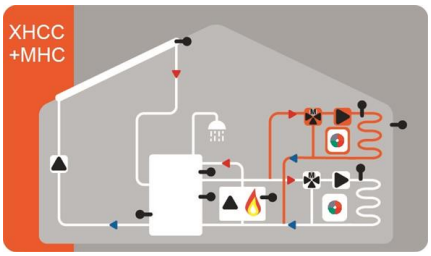


Combined storage tank with buffer storage tank with mixed heat circuit with additional function 2nd heating circuit.

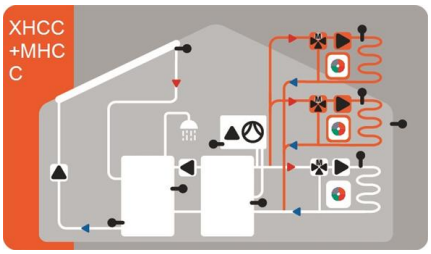
MHCC as an extension Module for 1 Mixed Heating Circuit each



MHCC standard scheme: gas boiler extended with °CALEONbox.

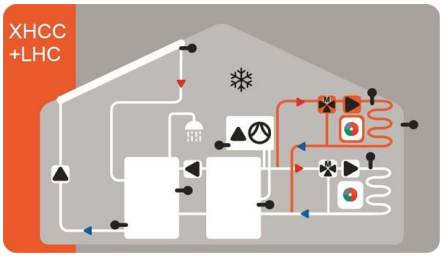


XHCC standard system: Combined storage with solar, gas boiler and heating circuit. An MHCC with °CALEON adds another
heating circuit.

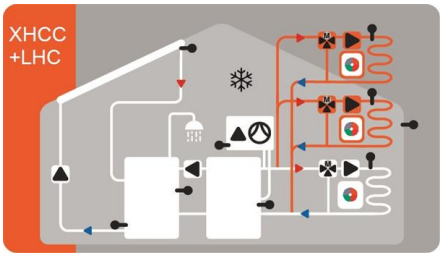


XHCC standard system: Buffer and hot water storage with solar, heat pump and heating circuit. Two MHCCs with °CALEON add two heating circuits.

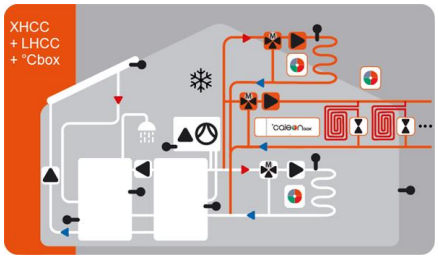
LHCC with °CALEON Clima as an extension for 1 Heating and Cooling Circuit



XHCC standard system: Buffer and hot water storage with solar, heat pump and heating and cooling circuit extended by 2 LHCC and 2 °CALEON Clima for an additional heating and cooling circuit.



XHCC standard system: Buffer and hot water storage with solar, heat pump and heating and cooling circuit extended by 1 LHCCs and 1 °CALEON Climas for two additional heating and cooling circuits.



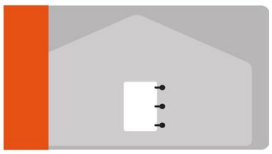
XHCC standard system: Buffer and hot water storage with solar, heat pump and heating and cooling circuit extended by 1 LHCCs and 1 °CALEON Climas for two additional heating and cooling circuits.

TC -Thermostat Controller

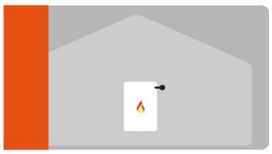
Controller with thermostat function for heating up the storage. Also for electrical backup heating of solar thermosiphon systems.

Inputs / Outputs	Menu Languages

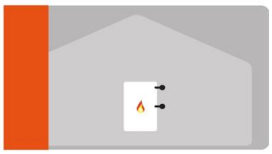
Hydraulic variants TC



Temperature display

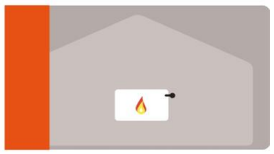


Thermostat S1



Thermostat S1 and S2

Thermostat S1 and S2



Thermosiphon

Recommended Accessories

Temperature sensors Pt1000

→ Page 61

Immersion sleeves

→ Page 62

External relay 4S

→ Page 63

List Prices

Art. No. 10006 - TC				
from quantity	1	10	20	40

Art. No. 10106 - TC Set with 1 sensor TT/S2 PT1000				
from quantity	1	10	20	40

Art. No. 10206 - TC Set with 2 sensors TT/S2 PT1000				
from quantity	1	10	20	40

Art. No. 10306 - TC Set with 3 sensors TT/S2 PT1000				
from quantity	1	10	20	40

FWC Fresh Water Controller

The controllers of the FWC series enable fast and precise regulation of the tap temperature in central fresh water stations. The heat from a storage is controlled and transferred to a heat exchanger via a pump or valve using the continuous flow principle, thus providing precisely tempered and legionella-free domestic hot water at the taps.

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 fl exibly.

Multilingual
Various menu languages freely selectable for clear under-standability.

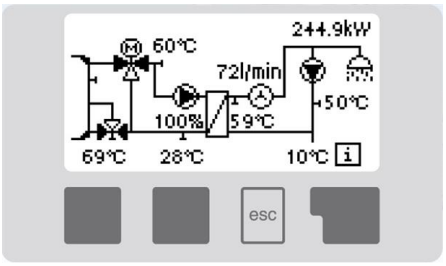
Network-compatible
Controllers can be networked via CAN bus or connected to the internet.

PC Simulation
Free Windows software facil-itates product trainings, per-formance tests and technical support.

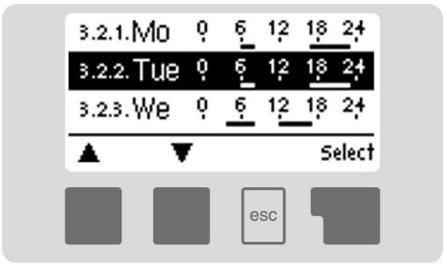
Cascade function
Additional fresh water stations via digital bus system when necessary due to a high amount of water being tapped. This makes a dedicated cascade con-troller / master controller obsol-ete.

Operator Guidance

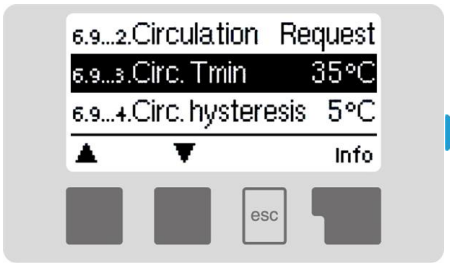
The setup wizard will rapidly guide you through the settings which need to be performed in a logically reasonable sequence. This way, any misadjustment is avoided and the para-metrising is simplified.



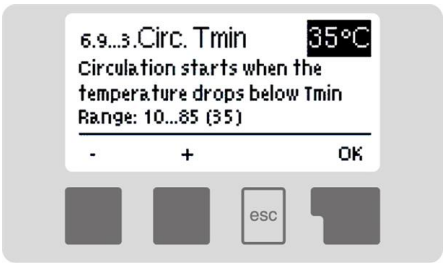
The display of the current measured values and the operating conditions is performed in a graphic mode with animations. Important func-tions are indicated as icons.



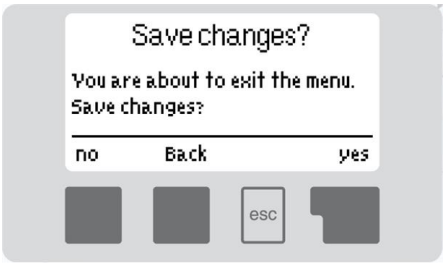
For each day of the week, operating times for circulation can be set and adopted for other days.



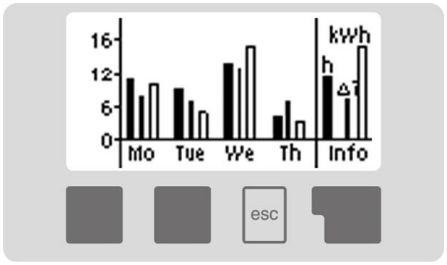
The clear menu offers options for request, ana-lysis and setting.



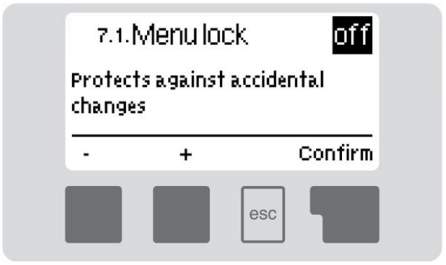
The self explanatory operator guidance allows the simple parametrisation, assisted with func-tional explanations.



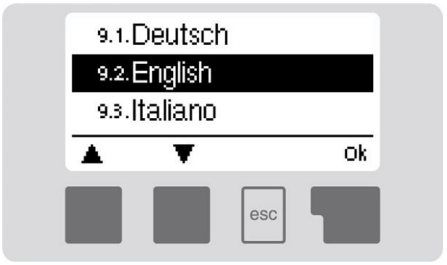
Confirmation dialogs and menu block func-tions prevent unwanted misadjustments.



The function control and the long term mon-itoring of the installation is provided by record-ing and evaluating of the data.



The menu locks protect against unintentional adjustments.



The menu is available in a wide variety of lan-guages.

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

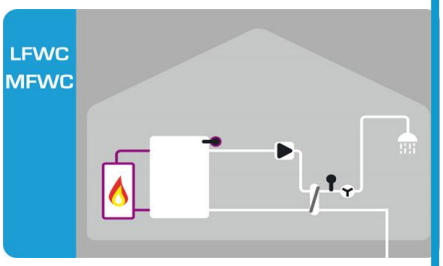
Additional functions for extending predefined schemes

Examples of additional functions

- Circulation
- Primary mixer
- Additional pump
- Parallel operating V1/V2
- Relay always on
- Storage heating
- Storage stratification
- AL heating
- Error message

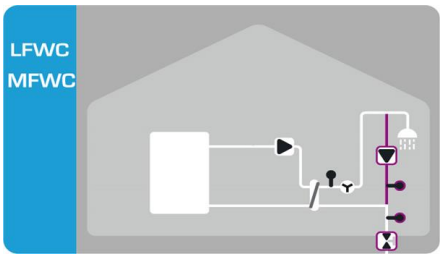
Example:

System 1 +



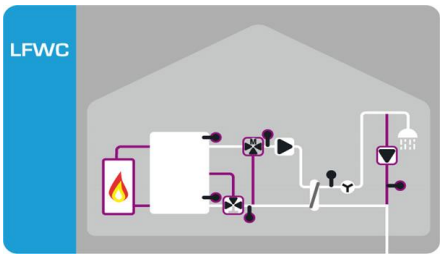
additional function. Storage heating

System 1 + +



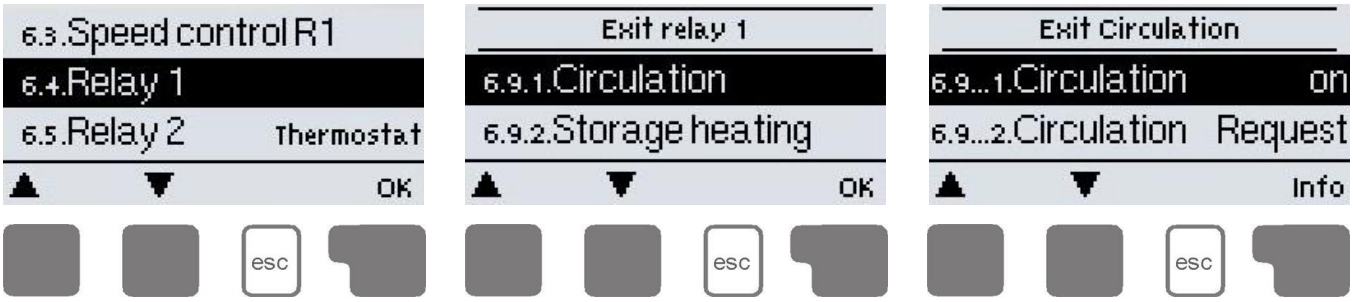
additional function. Cascade and circulation

System 1 + + + +



additional function Primary premixer, circulation, storage stratification and storage heating

Additional function easily adjusted:



1. Select free relay

2. Select additional function

3. Set function

OEM service: We are happy to contribute our experience from over 10 years of fresh water development in order to optimally adjust all control parameters for your fresh water station - for a fast and stable tap temperature in all common tap profiles.

Fresh Water Controllers

The controllers of the FWC series enable fast and precise regulation of the tap temperature in central fresh water stations. The heat from a storage is transferred to the tap water circuit via a heat exchanger using the continuous flow principle and thus provised precisely tempered and legionella-free water at the taps.

FWC	SFWC	MFWC	LFWC
Sensor inputs Pt1000	2	6	5 + 3*
Sensor inputs VFS / VVX / VTY sensor	1	1	1
Relay outputs 230V	1	3	3
Outputs 0..10V or PWM signal for speed control of high-efficiency pumps	1	2	3 + 1*
Number of applications	2	9	12
Extension of pre-defined systems by selectable additional functions	✓	✓	✓
LEDs red/green for display of operating status	✗	✓	✓
Statistics and graphic analysis of data memory	✓	✓	✓
Flow based heat metering via Grundfos direct sensor (VFS)	✓	✓	✓
Pressure monitoring via Grundfos direct sensor (RPS)	✗	✓	✓
Battery-backed Real Time Clock > 24h	✓	✓	✓
Time and temperature-controlled thermostat function	✗	✓	✓
Time and Temperature-controlled circulation pump switch	✓	✓	✓
Switch for zone valve for optimized storage layering	✗	✓	✓
Pre-regulation of the primary circuit Temperature by three-way mixer	✗	✗	✓
Anti-legionella function	✓	✓	✓
Legionella protecion via additional heating	✗	✓	✓
Setup wizard	✓	✓	✓
Solar-System protection	✗	✗	✓
Discharge protection	✓	✓	✓
Function control and error memory with date and time	✓	✓	✓
Menu blocker	✓	✓	✓
Power supply for universal voltage range (100...240VAC) and reduced standby consumption	✗	✓	✓
CAN bus connection for SOREL Connect	✗	✓	✓
Data logging on microSD card	✗	via data logger	via data logger
Ethernet connection	✗	via data logger	via data logger
Cascade function	✗	✓	✓
Dimensions Height x Width x Depth in mm	163 x 110 x 51	163 x 110 x 51	163 x 110 x 51
Housing colour	RAL 9003	RAL 9003	RAL 9003
Protection Class	IP40	IP40	IP40
Mounting Hardware, Spare Fuse and User Manual	✓	✓	✓
Product details	page 33	page 34	page 35

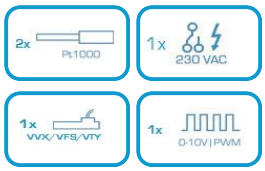
* on extension plug

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

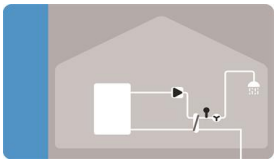
SFWC - Small Fresh Water Controllers

The controller for small fresh water stations with speed-controlled high-efficiency pump.

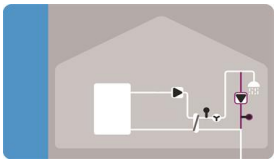
Inputs / Outputs	Menu Languages



Hydraulic variants SFWC



Basic scheme



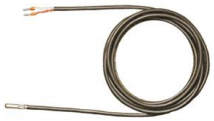
Additional function circulation

Recommended Accessories

VVX / VFS / RPS Combined sensor

→ Page 63

Temperature sensors Pt1000



→ Page 61

Immersion sleeves

→ Page 62

Pre-wiring

→ Page 70

List Prices

Note: Sales only to manufacturers of fresh water systems.

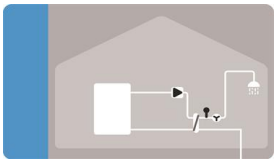
Art. No. 47001 - SFWC	
	on request

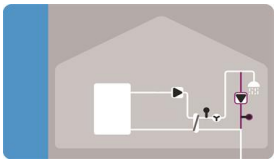
MFWC - Medium Fresh Water Controllers

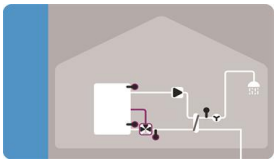
Universal controller for fresh water stations with speed-controlled high-efficiency pump and selectable additional functions like control of circulation pump.

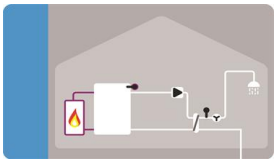
Inputs / Outputs	Connectivity	Menu Languages
6x Pt1000 3 x 230 VAC 1x VVX/VFS/VTY 1x 230 VAC 2x 0-10V PWM	Data logger	

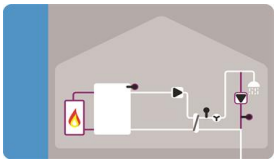
Hydraulic variants MFWC

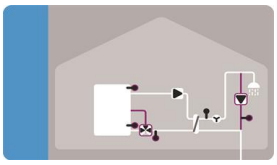

Basic scheme

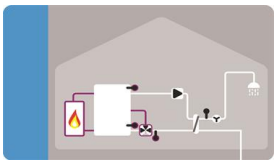

Additional function circulation

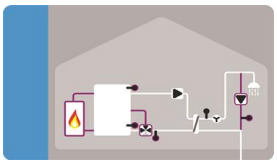

Additional function Storage stratification

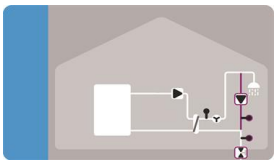

Additional function Storage heating


Additional function Storage heating and circulation


Additional function Storage stratification and circulation


Additional function Storage stratification and storage heating


Additional function Zirculation, storage stratification and Storage heating


Additional function Cascade and circulation

Recommended Accessories

Data logger

→ Page 60

VVX / VFS / RPS Combined sensor

→ Page 63

Temperature sensors Pt1000

→ Page 61

CAN Connection set

→ Page 60

List Prices

Note: Sales only to manufacturers of fresh water systems.

Art. No. 47003 - MFWC	
	on request

LFWC - Large Fresh Water Controllers

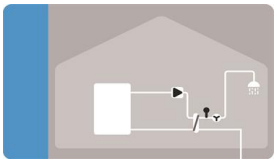
For large fresh water stations with speed-controlled high-efficiency pump and selectable additional functions like pre-control of primary Temperature, storage zone valve, additional control of circulation pump and one Solar pump.

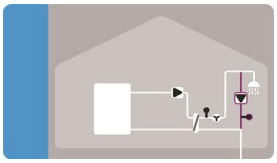
Inputs / Outputs	Connectivity	Menu Languages
5 + 3* Pt1000 4x 230 VAC 1x VVX/VFS/VTY 1x 230 VAC 3 + 1* 0-10V/PWM	Data logger	

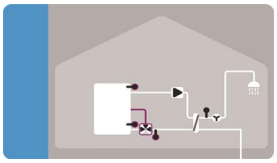
New: additional sensors and 0-10V/PWM outputs.

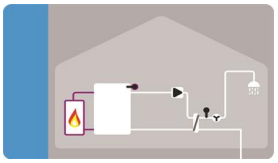
* on extension plug

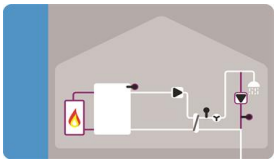
Hydraulic variants LFWC

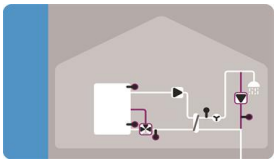

Basic scheme

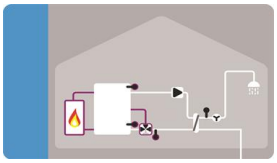

Circulation

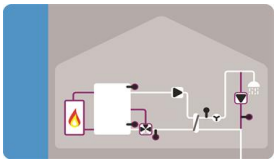

Storage stratification

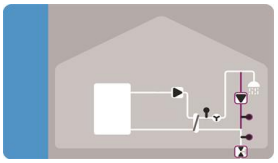

Storage heating

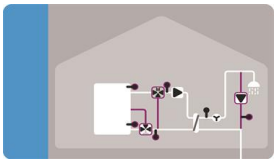

Storage heating and circulation

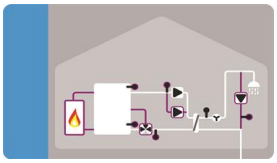

Storage stratification and circulation

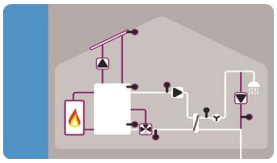

Storage stratification and storage heating


Circulation, storage stratification and storage heating


Cascade and circulation


Primary premixer, circulation and storage stratification


Circulation, storage stratification, storage heating and additional pump


Circulation, storage stratification, storage heating and solar

Recommended Accessories

Data logger

→Page 60

VVX / VFS / RPS Combined sensor

→Page 63

Temperature sensors Pt1000

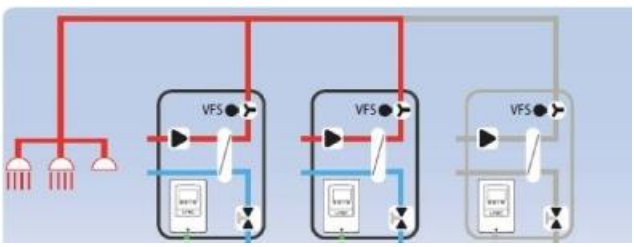
→Page 61

List Prices

Art. No.	47007 - LFWC
	on request

Note: Sales only to manufacturers of fresh water systems.

Cascade function



The Cascade function uses the digital bus on the MFWC or LFWC to switch on additional fresh water stations in case of high tapping activity. No additional master or cascade controller is necessary.

Heat Interface Units

Controllers for heat interface units control the decentralised fresh water preparation, especially in apartment buildings. Optionally, a weather-compensated heating circuit and the zones of a surface heating system can also be controlled.

	SHCC Fresh	HCC Fresh
Sensor inputs Pt1000	4	8
Sensor inputs flow sensors	1	1
Relay output voltage-free	3	3
Outputs 0..10V or PWM signal	3	4 (2x 0-10V/PWM, 2x PWM)
Number of applications	3	5
Extension of pre-defined systems by selectable additional functions	✓	✓
LEDs red/green for display of operating status	×	✓
Programmable thermostat times and functions per day	2×3	2×3
Comfort function for quick heating	✓	✓
Heating circuit with mixer	1	1
Heating circuit without mixer	×	1
Domestic hot water function with operating times	✓	✓
Circulation of domestic hot water with operating times	✓	✓
Hot water standby	✓	✓
DHW Priority	✓	✓
Antilegionella function	✓	✓
Setup wizard	✓	✓
Anti-freeze protection	✓	✓
Seizing Protection	✓	✓
Function control and error memory with date and time	✓	✓
Error memory and analysis with date and time	✓	✓
Menu blocker	✓	✓
CAN bus connection	×	✓
Data logging on microSD card	via data logger	via data logger
Ethernet connection	via data logger	via data logger
Dimensions Height x Width x Depth in mm	115 x 86 x 45	163 x 110 x 51
Housing colour	RAL 9003	RAL 9003
Protection Class	IP40	IP40
Mounting Hardware, Spare Fuse and User Manual	✓	✓
Product details	page 37	page 38

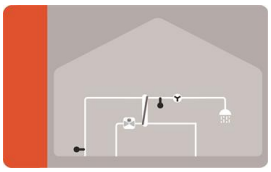
SHCC Fresh

Heating circuit controller with adjustable setpoint and additional control of fast valves for decentralised fresh water function in heat interface units.

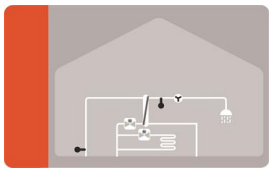
Optionally with circulation pump control and warm-keeping function.

Inputs / Outputs	Menu Languages

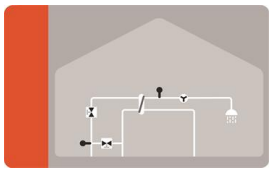
Hydraulic variants SHCC Fresh



Decentralised fresh water control without heating circuit



Decentralised fresh water control with unregulated heating circuit



Decentralised fresh water control with valve for hot water standby, temperature and flow sensors

Recommended Accessories

VFS Combined sensor

→ Page 63

Temperature sensors Pt1000

→ Page 61

Pre-wiring

→ Page 70

List Prices

Art. No. 47024 - SHCC Fresh VTY	Art. No. 47025 - SHCC Fresh VFS
on request	on request

OEM service: We are happy to contribute our experience from over 10 years of fresh water development in order to optimally adjust all control parameters for your fresh water station - for a fast and stable tap temperature in all common tap profiles.

Additional contents

Optimising heat interface units with electronic controls

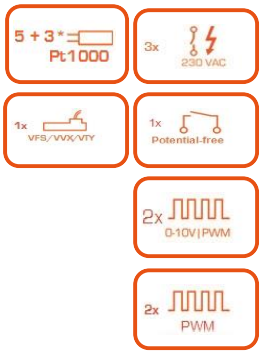
→ www.sorel.de/en/electronic-heat-interface-unit

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

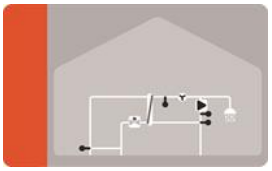
HCC Fresh

Weather-compensated heating circuit controller with fresh water function for heat interface units. Optionally with cooling function, circulation pump control, warm-keeping function and systemwide DHW priority function.

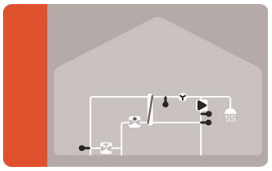
Inputs / Outputs	Connectivity	Menu Languages



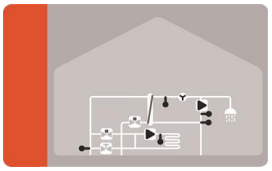
Hydraulic variants HCC Fresh



Decentralised fresh water control without heating circuit

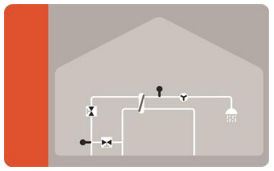


Decentralised fresh water control unregulated



Decentralised fresh water control with regulated heating circuit

Decentralised fresh water control with weather-compensated heating circuit



Dec.friwa control with valve for hot water standby, temperature and flow sensors

Recommended Accessories

°CALEON Room Controller

→Page 12

°C-Lite Thermostat

→ Page 14

Temperature sensors Pt1000

→ Page 61

CAN connection set

→Page 60

VFS Combined sensor

→ Page 63

List Prices

Art. No. 27008 - HCC Fresh	on request

OEM service: We are happy to contribute our experience from over 10 years of fresh water development in order to optimally adjust all control parameters for your fresh water station - for a fast and stable tap temperature in all common tap profiles.

Additional contents

Optimising heat interface units with electronic controls

→ www.sorel.de/en/electronic-heat-interface-unit

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

TDC Solar controller

Temperature difference controllers by SOREL: versatile and easy to use. Thanks to the crystal clear user guidance, different types of solar systems can be operated 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 fl exibly.

Multilingual
Various menu languages freely selectable for clear under-standability.

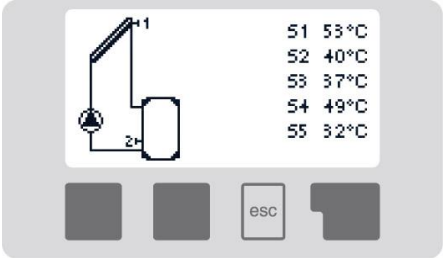
Network-compatible
Controllers can be networked via CAN bus or connected to the internet.

PC Simulation
Free Windows software facil-itates product trainings, per-formance tests and technical support.

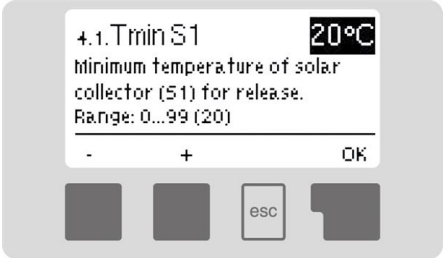
CAN-Bus
For internet connection via data logger or to system optimization by communi-cation with our heat-ing controllers.

Operator Guidance

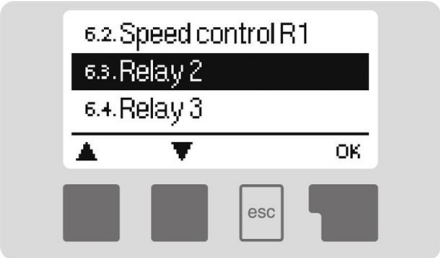
The setup wizard will rapidly guide you through the settings which need to be performed in a logically reasonable sequence. This way, any misadjustment is avoided and the para-metrising is simplified.



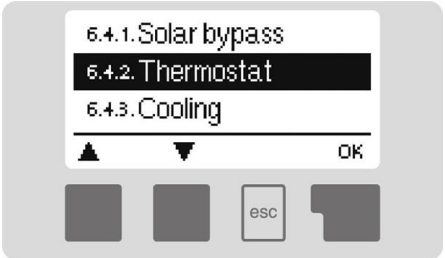
The display of the current measured values and the operating conditions is performed in a graphic mode with animations. Important func-tions are indicated as icons.



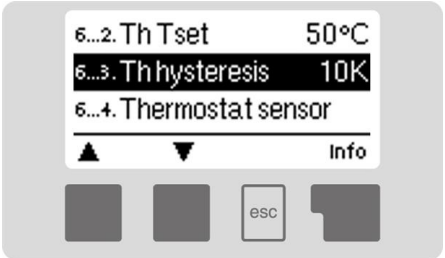
Setup with full text explanation



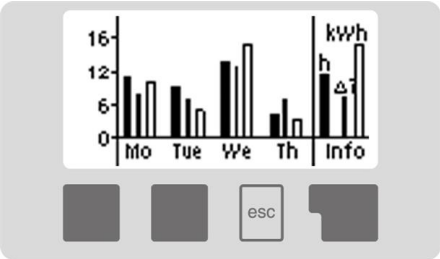
Configuration additional function: Select relay



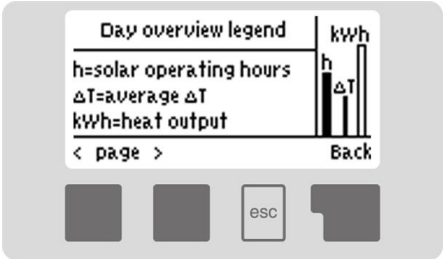
Selecting additional function



Setup of additional function thermostat



The function control and the long term mon-itoring of the installation is provided by record-ing and evaluating of the data.



Graphical analysis legend

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

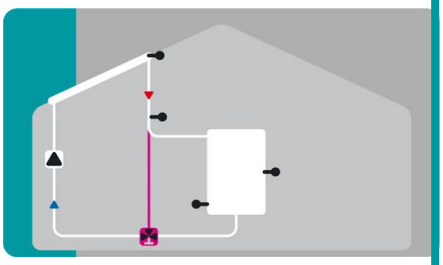
Additional functions for extending predefined schemes

Examples of additional functions

- Temp. Difference
- Booster pump
- Cooling function
- Heat circuit
- Solid fuel boilers
- Solar bypass
- Storage transfer
- Anti-legionella
- Error message
- Parallel operating
- Return flow increase
- Relay always on

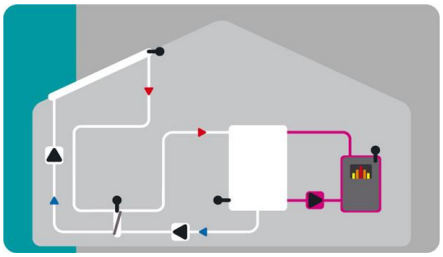
Example:

MTDC System 1 +



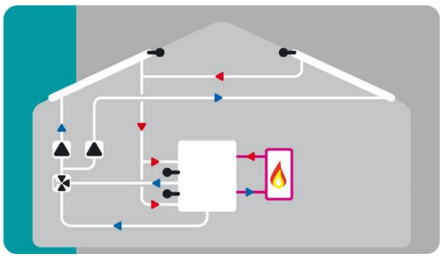
Solar with storage and additional solar bypass function

LTDC System 14 +



Solar with heat exchanger with additional function Solid Fuel Boiler

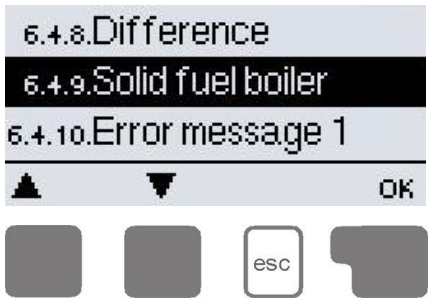
XTDC System 20 +



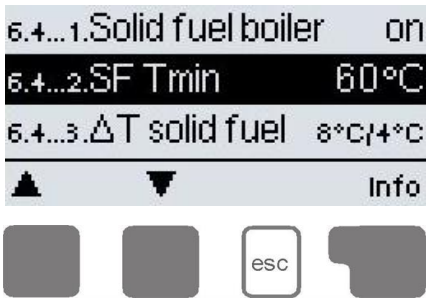
Solar with 2 zone storage and switching valve with additional function Thermostat

Additional function easily adjusted:

1. Select free relay



2. Select additional function



3. Set function

Temperature Difference Controllers TDC

TDC	STDC	MTDC
Sensor inputs Pt1000	3	4
Relay outputs 230V	1	2
Relay output voltage-free	✕	✕
Outputs 0..10V or PWM signal for speed control of high-efficiency pumps	1	1
Number of applications	9	25+
Extension of pre-defined systems by selectable additional functions	✕	✓
LEDs red/green for display of operating status	✕	✓
Statistics and graphic analysis of data memory	✓	✓
Flow based heat metering via Grundfos direct sensor (VFS / VVX)	✕	✕
Pressure monitoring via Grundfos direct sensor (RPS)	✕	✕
Battery-backed Real Time Clock > 24h	✓	✓
Time and temperature-controlled thermostat function	✓	✓
Ventilation flap function	✕	✕
Legionella function via solar	✓	✓
Legionella protecion via additional heating	✓	✓
Cooling function	✓	✓
Setup wizard	✓	✓
System protection	✓	✓
Collector protection	✓	✓
Storage protection (KS-Tmax)	✓	✓
Anti-freeze protection	✓	✓
Recooling	✓	✓
Start logic for vacuum tube collectors	✓	✓
Control program for self-dumping systems (drain-back)	✓	✓
Function control and error memory with date and time	✓	✓
Menu blocker	✓	✓
Power supply for universal voltage range (100...240VAC) and reduced standby consumption	✕	✓
CAN bus connection for SOREL Connect	✕	✓
Data logging on microSD card	✕	via data logger
Ethernet connection	✕	via data logger
Dimensions Height x Width x Depth in mm	163 x 110 x 51	163 x 110 x 51
Housing colour	RAL 9003	RAL 9003
Protection Class	IP40	IP40
Mounting Hardware, Spare Fuse and User Manual	✓	✓
Product details	page 44	page 45

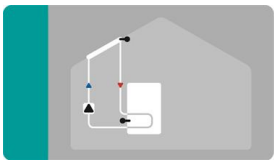
LTDC	XTDC	MTDC-E	LTDC-E
6	8	3	4
3	6	1	2
✕	1	1	1
2	2	✕	1
42+	48+	5	8
✓	✓	✕	✕
✓	✓	✓	✓
✓	✓	✓	✓
2	2	✕	✕
2	2	✕	✕
✓	✓	✓	✓
✓	✓	✓	✓
✕	✕	✕	✕
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✕	✕	✕
via data logger	✓	✕	✕
via data logger	✓	✕	✕
163 x 110 x 51	228 x 180 x 53	163 x 110 x 51	163 x 110 x 51
RAL 9003	RAL 9003	RAL 9003	RAL 9003
IP40	IP40	IP40	IP40
✓	✓	✓	✓
page 47	page 49	page 52	page 53

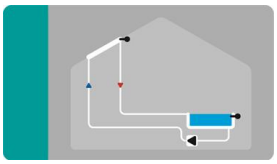
STDC - Small Temperature Difference Controller

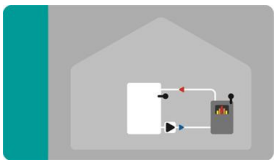
Single circuit controller for simple systems with 1 storage.

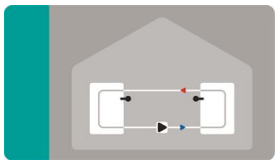
Inputs / Outputs	Menu Languages
3x Pt1000 1x 230 VAC 1x 0-10V I PWM	

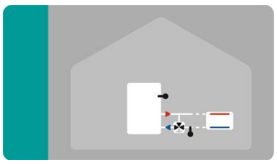
Hydraulic variants STDC

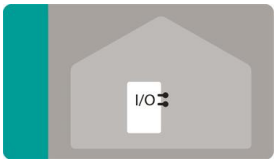

Solar with storage


Solar with pool


Solid fuil boiler with storage

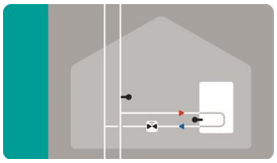

Storage transfer

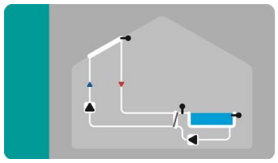

Return flow increase



Thermostat function

Universal DeltaT


Stop valve


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

Recommended Accessories

Temperature sensors Pt1000

→ Page 61

Immersion sleeves

→ Page 62

List Prices

Art. No. 10003 - STDC				
from quantity	1	10	20	40

Art. No. 10203 - STDC with 2 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

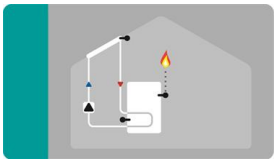
Art. No. 10303 - STDC with 3 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

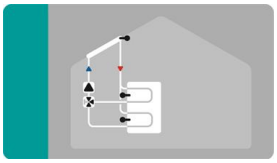
MTDC - Temperature Difference Controllers

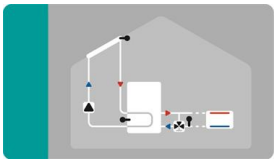
Dual circuit controller for solar systems with 1-2 storage tanks or second heat source.

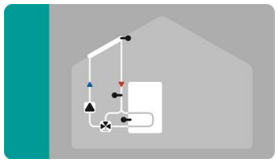
Inputs / Outputs	Connectivity	Menu Languages
4x Pt1000, 2x 230 VAC, 1x 0-10V I PWM	Datalogger	

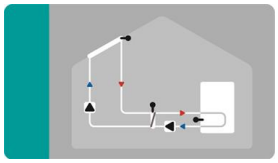
Hydraulic variants MTDC - Includes STDC variants plus:

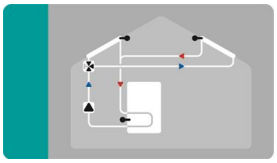

Solar with thermostat (additional heating)

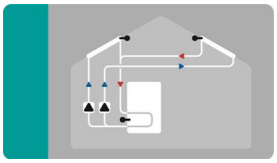

Solar with 2 zones storage

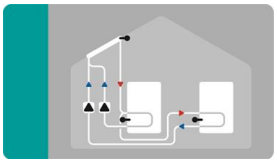

Solar with heating circuit

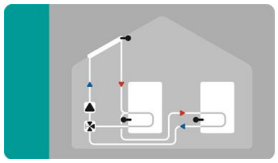

Solar with bypass

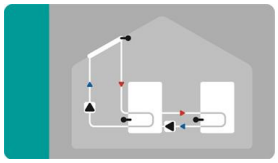

Solar with heat exchanger

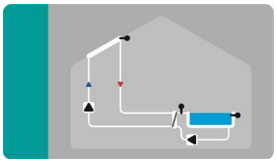

Solar with 2 collector surfaces

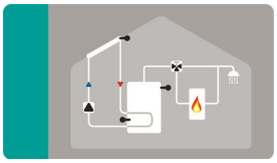

Solar with 2 collector surfaces and 2 pumps

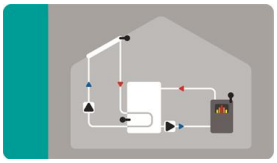

Solar with 2 storages and 2 pumps

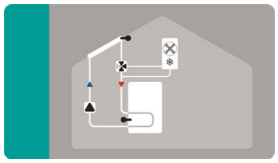

Solar with 2 storages and valve

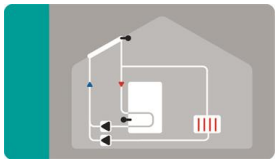

Solar with heat exchanger

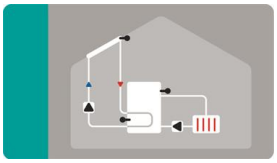

Solar with pool and heat exchanger


Solar with thermostat and valve


Solar with solid fuel boiler


Solar with cooling 1 (Coll. cooling)


Solar with cooling 2 (coll. cooling)


Solar with cooling 3 (storage cooling)

Recommended Accessories

Temperature sensors Pt1000

→ Page 61

Immersion sleeves

→ Page 62

Data logger

→ Page 60

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

List Prices

Art. No. 16005 - MTDC				
from quantity	1	10	20	40

Art. No. 16205 - MTDC with 2 sensors TT/S2 PT1000				
from quantity	1	10	20	40

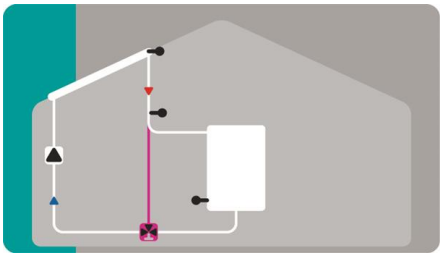
Art. No. 16305 - MTDC with 3 sensors TT/S2 PT1000				
from quantity	1	10	20	40

MTDC - Additional functions for free relays

- Solar bypass
- Backup heating control
- Cooling function
- Collector field cooling
- Return flow increase
- Anti-legionella function
- Storage transfer
- Universal DeltaT
- Solid fuel boiler control
- Signalling with activated protection function
- Signalling with new information message
- Booster for fast system loading
- Always on
- Pressure monitoring
- Parallel operating with R1
- Parallel operating with R2
- Thermostat 2
- Heat circuit

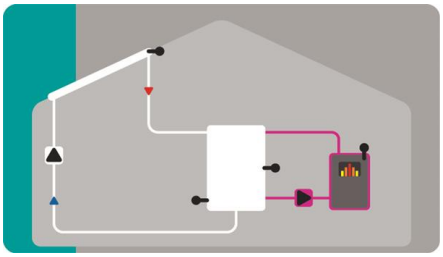
Example:

System 1 +



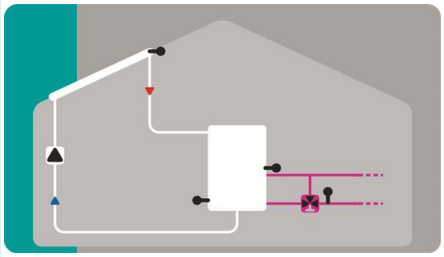
Solar with storage and additional solar bypass function

System 1 +



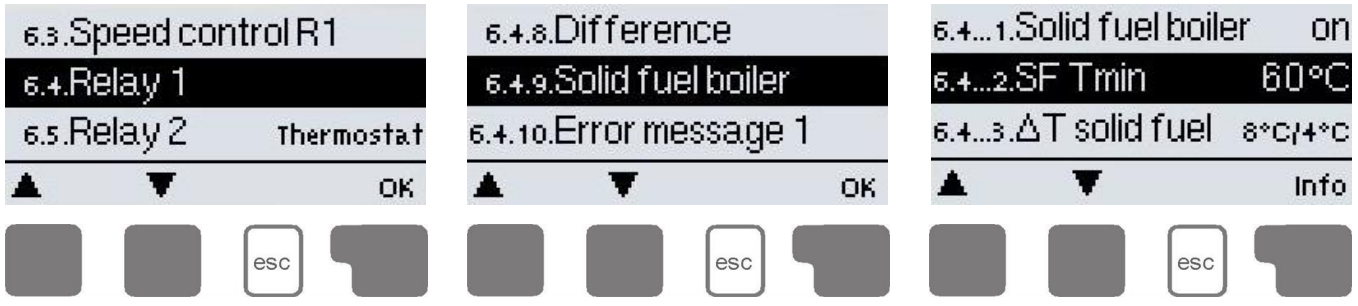
Solar with storage and additional function solid fuel boiler

System 1 +



Solar with storage and additional return flow boosting function

Additional function easily adjusted:



1. Select free relay

2. Select additional function

3. Set function

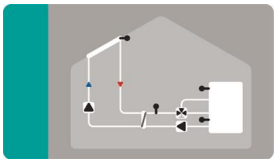
Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

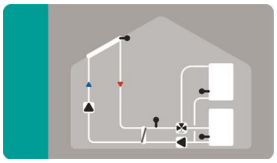
LTDC - Large Temperature Difference Controller

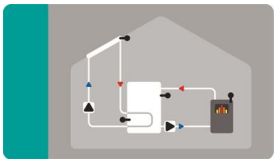
Three-circuit controller for solar systems with 1-3 storage tanks and different heat sources.

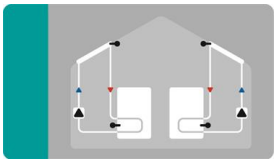
Inputs / Outputs	Connectivity	Menu Languages
6x Pt1000, 2x 230 VAC, 2x VVX/VFS/RPS, 1x 230 VAC, 2x 0-10V I PWM	Datalogger	

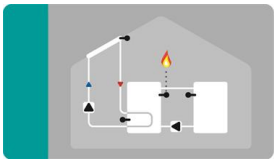
Hydraulic variants LTDC - Includes all sTDC and MTDC variants plus:

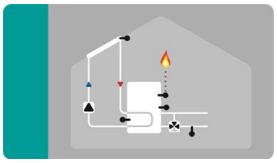

Solar with heat exchanger and valve

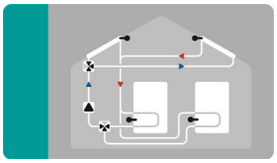

Solar with 2 storages and heat exchanger

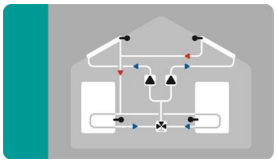

Solar with storage and solid-fuel boiler

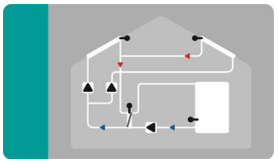

2 x Solar

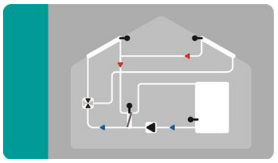

Solar with thermostat and Storage transfer

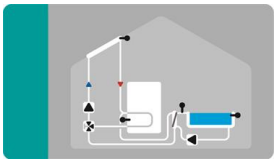

Solar with thermostat and return flow increase

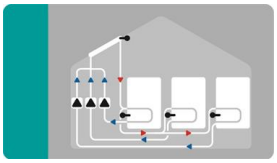

Solar with 2 collector surfaces, 2 storages and 2 valves

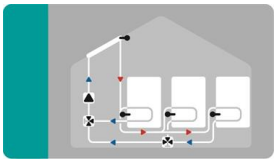

Solar with 2 collector surfaces, 2 storages and 2 pumps

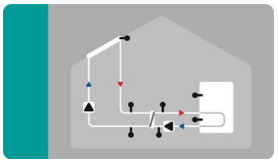

2 x Solar with storage, 2 pumps and heat exchanger

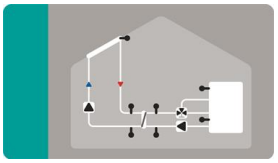

2 x Solar with storage, valve and heat exchanger

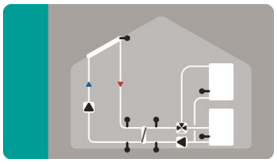

Solar with swimming pool, storage, heat exchanger and valve


Solar with 3 storages and 3 pumps


Solar with 3 storages and 2 valves


Solar,heat exchanger and storages for large systems


Solar with storage, heat exchanger and storages for large systems


Solar, heat exchanger, zone valve and 2 storages for large systems

Recommended Accessories

Temperature sensors / Immersion sleeves

→ Page 62

Data logger

→ Page 60

VVX / VFS / RPS Combined sensor

→ Page 63

List Prices

Art. No. 17003 - LTDC				
from quantity	1	10	20	40

Art. No. 17303 - LTDC with 3 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

Art. No. 17403 - LTDC with 4 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

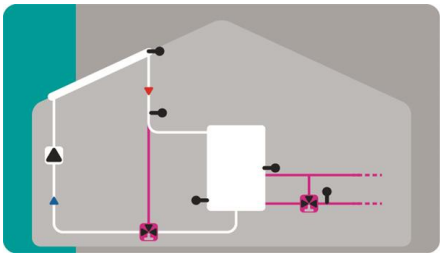
Art. No. 17503 - LTDC with 5 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

LTDC - Additional functions for free relays

- Solar bypass
- Backup heating control
- Cooling function
- Collector field cooling
- Return flow increase
- Anti-legionella function
- Storage transfer
- Universal DeltaT
- Solid fuel boiler control
- Signalling with activated protection function
- Signalling with new information message
- Booster for fast system loading
- Always on
- Pressure monitoring
- Parallel operating with R1
- Parallel operating with R2
- Thermostat 2
- Heat circuit

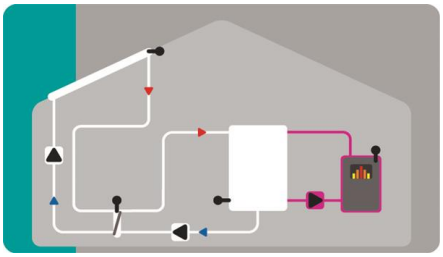
Example:

System 1 +



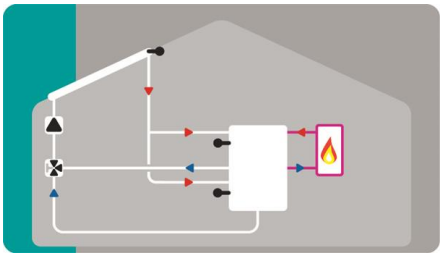
Solar with storage with additional functions Solar Bypass and Return Flow Increase

System 2 +



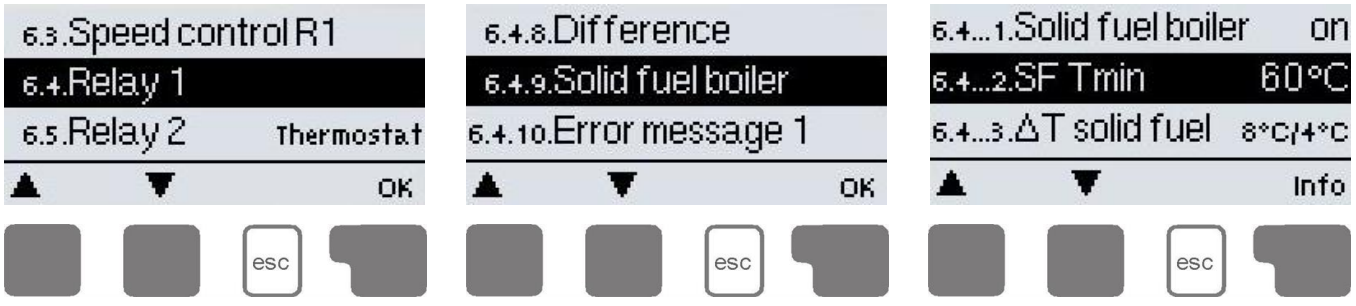
Solar with heat exchanger with additional function Solid Fuel Boiler

System 10 +



Solar with 2 zone storage and switching valve with additional function Thermostat

Additional function easily adjusted:



1. Select free relay

2. Select additional function

3. Set function

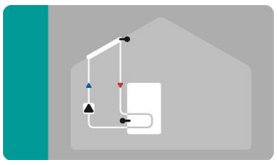
Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

XTDC- XtraLarge Temperature Difference Controller

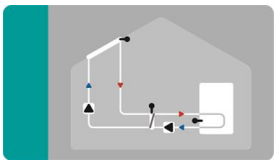
Multi-circuit controller for complex solar systems

Inputs / Outputs	Connectivity	Menu Languages
8x Pt1000 8x 230 VAC 2x VVX/VFS/RPS 2x 0-10V I PWM 1x RC20 1x Potenzialfrei	Lan	

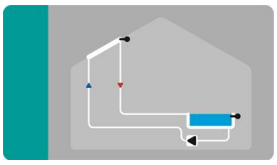
Hydraulic variants XTDC



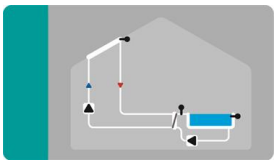
Solar with storage



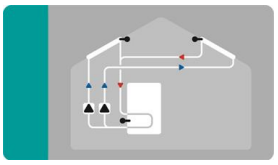
Solar with heat exchanger



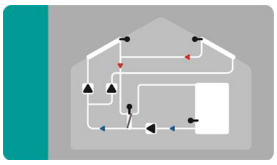
Solar with pool



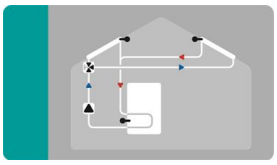
Solar with pool and heat exchanger



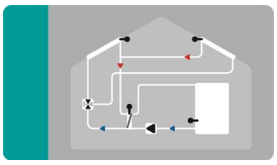
Solar with 2 collectors and 2 pumps



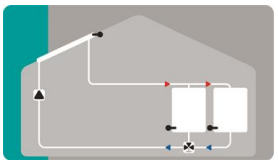
Solar with 2 collectors with 2 pumps, 1 storage, heat exchanger and Pump



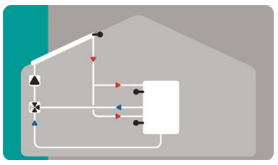
Solar with 2 collectors and switchingvalve



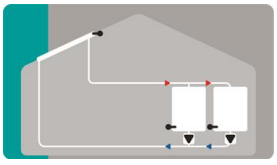
Solar with 2 collectors, switching valve and heat exchanger



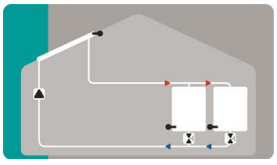
Solar with 2 storages and switching valve



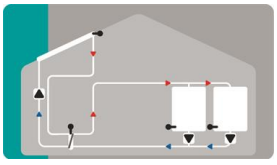
Solar with two-zone storage and switching



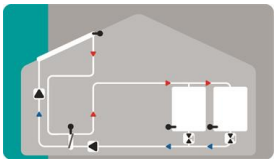
Solar with 2 storages and 2 pumps



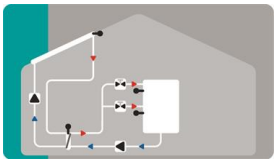
Solar with 2 storages and 2 stop valves



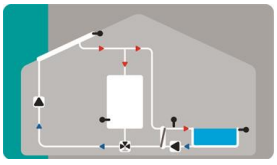
Solar with 2 storages, 2 pumps and heat exchanger



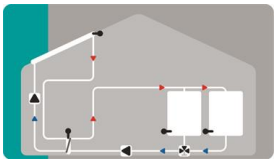
Solar with 2 storages, 2 stop valves



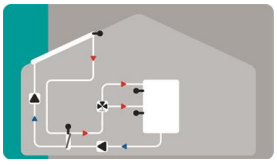
Solar with two-zone storage and stop valve



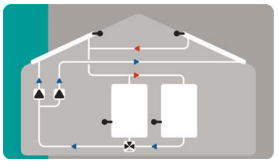
Solar, storage, pool and heat exchanger



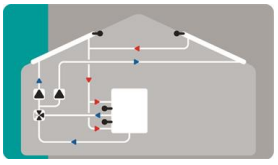
Solar with 2 storages and switching valve heat exchanger



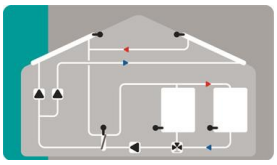
Solar with two-zone storage and switching valve heat exchanger



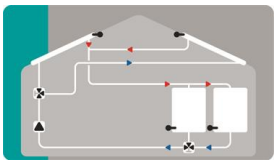
Solar with 2 collector surfaces, 2 storages, 2 pumps and switching valve



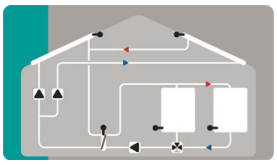
Solar with 2 collector surfaces, two-zone storage, 2 pumps and switching valve



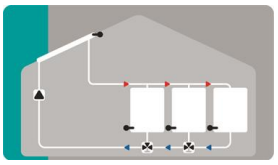
Solar with 2 collectorswith 2 pumps, 2 storages, heat exchanger and pump



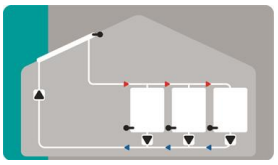
Solar with 2 collectors, 2 storages and 2 switching valves



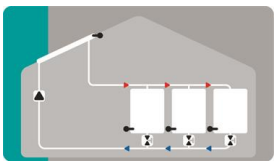
Solar with 2 collectors with valve, 1 pump, 2 storages, heat exchanger and pump



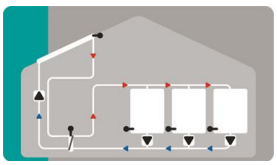
Solar with 3 storages and 2 switching valves



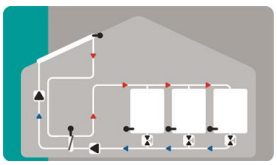
Solar with 2 storages and 3 pumps



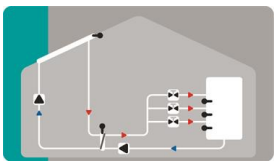
Solar with 3 storages and 3 stop valves



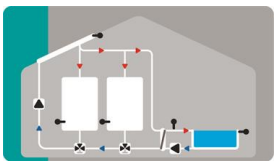
Solar with 3 storages, 3 pumps and heat exchanger



Solar with 3 storages, 3 stop valves and heat exchanger



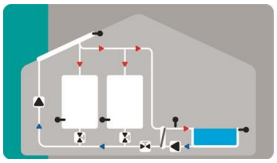
Solar with 3-zone storage, 3 stop valves and heat exchanger

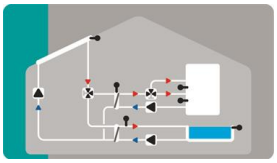


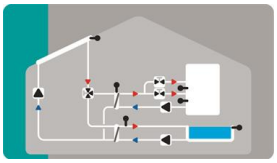
Solar with 2 storages, switching valves and swimming pool with heat exchanger

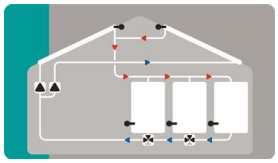
Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

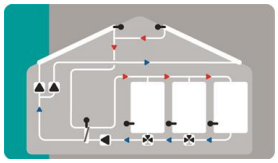
Hydraulic variants XTDC

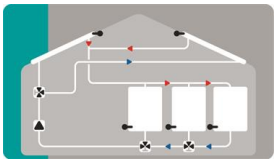

Solar with 2 storages, 3 stop valves and swimming pool with heat exchanger

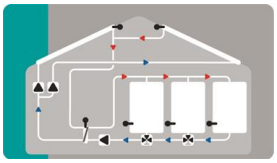

Solar with 2 storages, switching valve, heat exchanger and pool with heat exchanger

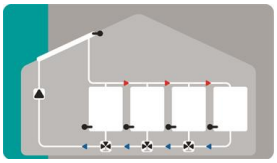

Solar with 2 two-zone storage, 2 stop valves, heat exchanger and pool with heat exchanger

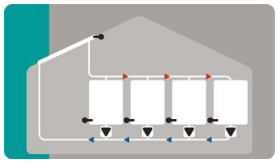

Solar with 2 collector and 3 storages with 2 switching valves

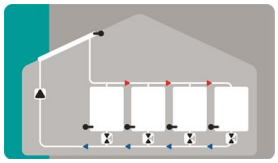

Solar with 2 collector, 3 storages with 2 switching valves and heat exchanger

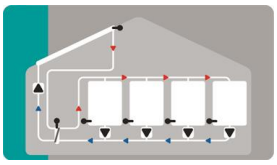

Solar with 2 collector with 1 valve, 1 pump, 3 storages with valves

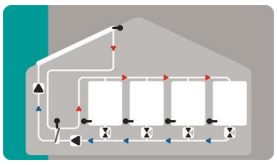

Solar with 2 collector with 2 pumps, 3 storages, heat exchanger and pump

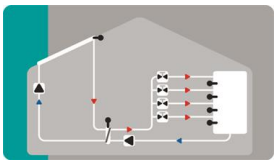

Solar with 4 storages and 3 valves

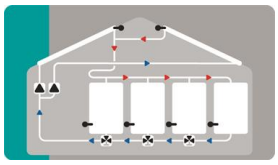

Solar with 4 storages and 4 pumps

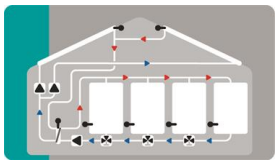

Solar with 4 storages and 4 stop valves

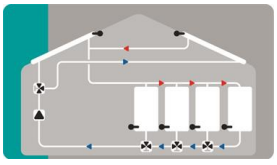

Solar with 4 storages, 4 pumps and heat exchanger

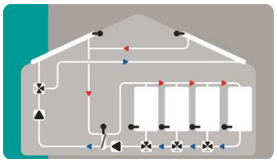

Solar with 4 storages, 4 stop valves and heat exchanger

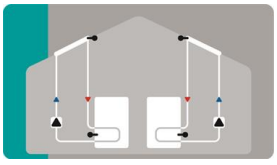

Solar with 4-zone storage and 4 stop valves


Solar with 2 collectors, 4 storages, 2 pumps and 3 switching valves


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


Solar with 2 collectors, 4 storages and 3 switching valves


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


2 x Solar

Recommended Accessories

Temperature sensors Pt1000

→ Page 61

System-Dependent Pre-Parametrisation

→ Page 71

Immersion sleeves

→ Page 62

VVX / VFS / RPS Combined sensor

→ Page 63

List Prices

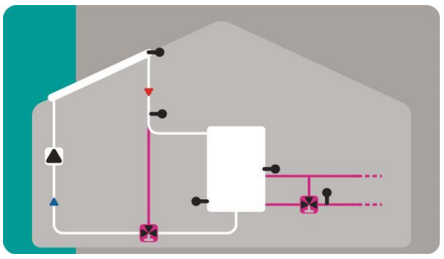
Art. No. 18002 - XTDC with Ethernet incl. SOREL Connect				
from quantity	1	10	20	40

XTDC - Additional functions for free relays

- Solar bypass
- Backup heating control
- Cooling function
- Collector field cooling
- Return flow increase
- Anti-legionella function
- Storage transfer
- Universal DeltaT
- Solid fuel boiler control
- Signalling with activated protection function
- Signalling with new information message
- Booster for fast system loading
- Always on
- Pressure monitoring
- Parallel operating with R1
- Parallel operating with R2
- Thermostat 2
- Heat circuit

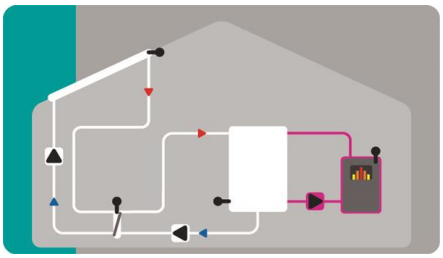
Example:

System 1 +



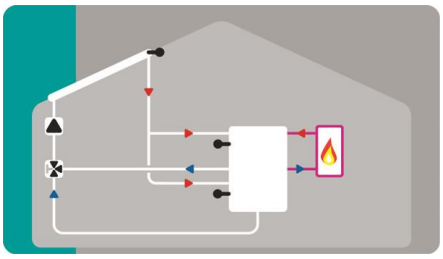
Solar with storage with additional functions Solar Bypass and Return Flow Increase

System 2 +



Solar with heat exchanger with additional function Solid Fuel Boiler

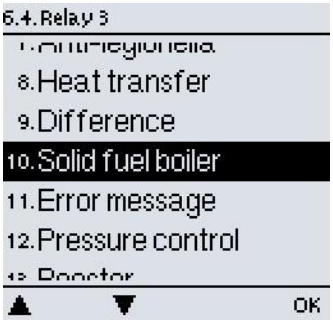
System 10 +



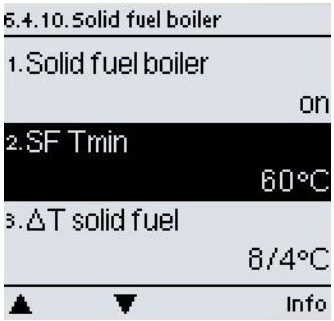
Solar with 2 zone storage and switching valve with additional function Thermostat

Additional function easily adjusted:

1. Select free relay



2. Select additional function



3. Set function

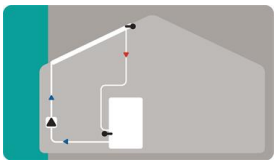
MTDC-E - Temperature Difference Controller

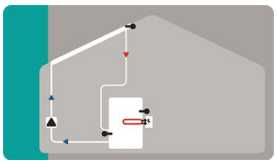
For basic solar systems with electric backup heating up to 3kW.

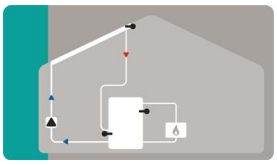
Inputs / Outputs	Menu Languages
3x Pt1000 1x 230 VAC 1x Voltage free 1x 0-10V / PWM	

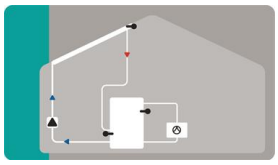
New: suitable for high-efficiency pumps and with additional hydraulic variant.

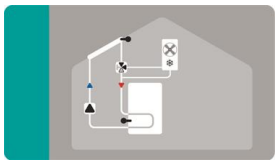
Hydraulic variants MTDC-E


Solar with storage


Solar, storage and electric heating rod


Solar, storage and gas boilers


Solar, storage and Heat pump


Solar with storage and Cooling

Recommended Accessories

Temperature sensors Pt1000

→ Page 61

Immersion sleeves

→ Page 62

List Prices

Art. No. 16006 - MTDC-E				
from quantity	1	10	20	40

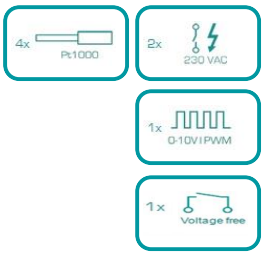
Art. No. 16206 - MTDC-E with 2 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

Art. No. 16306 - MTDC-E with 3 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

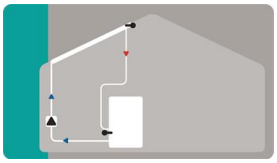
LTDC-E - Temperature Difference Controller

For basic solar systems with electric backup heating up to 3kW and control of circulation pump.

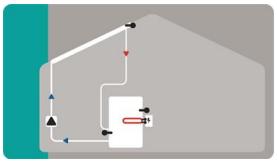
Inputs / Outputs	Menu Languages



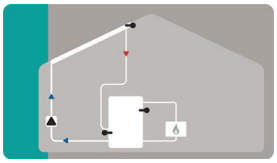
Hydraulic variants LTDC



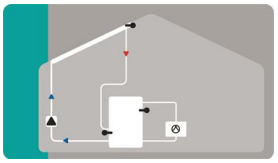
Solar with storage



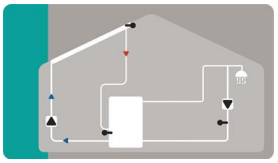
Solar, storage and electric heating rod



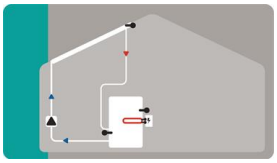
Solar, storage and gas boilers



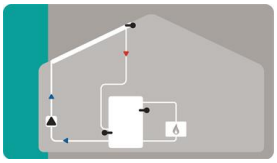
Solar, storage and Heat pump



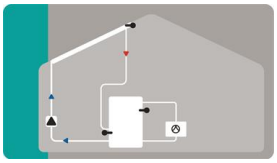
Solar, storage and Circulation



Solar with storage, immersion heater and circulation



Solar with storage, gas boiler and circulation



Solar with storage, heat pump and circulation

Recommended Accessories

Temperature sensors Pt1000

→ Page 61

Immersion sleeves

→ Page 62

External switching relay 4S24A

→ Page 63

List Prices

Art. No. 16007 - LTDC-E				
from quantity	1	10	20	40

Art. No. 16307 - LTDC-E with 3 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

Art. No. 16407 - LTDC-E with 4 sensors TT/ S2 PT1000				
from quantity	1	10	20	40

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

Pump groups without TDC controller

S1-Solar-1

Completely pre-assembled and tested pump groups 3/4“ with solar pump and safety assembly

- High-efficiency pump WILO Yonos Para ST 25/6 iPWM
- Ball valves with integrated stop valve and thermometer
- Flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- Wall-fastening fixture
- Working temperature 120 °C (short-term 160)

Art. No. 71111 - S1-Solar-1 3/ 4“AG	
Art. No. 71111	

S2-Solar-2

Completely pre-assembled and tested pump groups 3/4“ with solar pump and safety assembly

- High-efficiency pump WILO Yonos Para ST 25/6 iPWM
- Ball valves with integrated stop valve and thermometer
- Flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- Wall-fastening fixture
- Distance between supply and return 125 mm
- Working temperature 120 °C (short-term 160)

Art. No. 72211 - S2-Solar-2 3/ 4“AG	
Art. No. 72211	

S2-Solar-3 with vent pipe

Completely pre-assembled and tested pump groups 3/4“ with solar pump and safety assembly

- High-efficiency pump WILO Yonos Para ST 25/6 iPWM
- Ball valves with integrated stop valve and thermometer
- Flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- Wall-fastening fixture
- Distance between supply and return 125 mm
- Working temperature 120 °C (short-term 160)
- Vent pipe

Art. No. 72311 - S2-Solar-3 3/ 4“AG	
Art. No. 72311	

Auxiliary equipment for all Solar groups

Wall fixture for expansion tanks for all solar groups	
Art. No. 77301	

Stainless steel flex pipe 0,5 m for expansion tank for all solar groups	
Art. No. 77401	

Pump groups with TDC controller

S1-Solar-10

Completely pre-assembled and tested single strand pump group 3/4“ with pump and safety assembly and solar controller STDC

- High-efficiency solar pump WILO Yonos Para ST 25/6 iPWM
- STDC wired ready to plug in and tested, including 2 sensors
- Ball valves with integrated stop valve and thermometer
- Flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- Wall-fastening fixture
- Working temperature 120 °C (short-term 160)

Art. No. 61103 - S1-Solar-10 pump group + STDC + HE Pumpe WILO Yonos Para ST 25/6 iPWM

from quantity	1	5	10	20

S2-Solar-30

Completely pre-assembled and tested solar station 3/4“ with pump, safety assembly, breather tube and solar controller MTDC

- High-efficiency solar pump WILO Yonos Para ST 25/6 iPWM or WILO Yonos Para ST 25/13 PWM
- MTDC or LTDC plugwired and tested, 3 sensors included
- Ball valves with integrated stop valve and thermometer
- Flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- Wall-fastening fixture
- Distance between supply and return 125 mm
- Working temperature 120 °C (short-term 160)

Art. No. 63163 - S2-Solar-30 pump group 3/4“AG + MTDC + HE Pumpe WILO Yonos Para ST 25/6 iPWM

from quantity	1	5	10	20

Art. No. 63263 - S2-Solar-30 pump group 1“AG + MTDC + HE Pump WILO Yonos Para ST 25/13 PWM

from quantity	1	5	10	20

Art. No. 63173 - S2-Solar-30 pump group 3/4“AG + LTDC + HE Pumpe WILO Yonos Para ST 25/6 iPWM

from quantity	1	5	10	20

Art. No. 63273 - S2-Solar-30 pump group 1“AG + LTDC + HE Pump WILO Yonos Para ST25/13 PWM

from quantity	1	5	10	20

Pump groups from various manufacturers as well as previous versions with standard pumps are available on request.

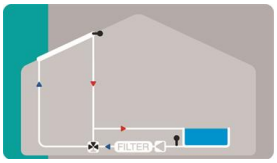
Pool TDC M / M+ Pool Controllers

Solar pool controller with optional control of the filter pump for efficient use and function control of the solar or heating system of your pool.

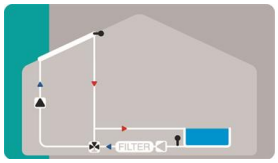
Inputs / Outputs	Menu Languages
3x Pt1000, 2x 230 VAC	

	Pool TDC M	Pool TDC M+
LEDs red/green for display of operating status	✓	✓
Statistics and graphic analysis of data memory	✓	✓
Battery-backed Real Time Clock > 24h	✓	✓
Time and temperature-controlled thermostat function	✓	✓
Setup wizard	✓	✓
Heat request	✓	✓
Filter pump control	✗	✓
Filter pump runtime control (3 times per day)	✗	✓
Temperature-dependent filter pump runtime optimization	✗	✓
Ecomode: Consideration of solar operating times	✗	✓
System protection	✓	✓
Anti-freeze protection	✓	✓
Function control and error memory with date and time	✓	✓
Menu blocker	✓	✓
Dimensions Height x Width x Depth in mm	163mm x 110mm x 51mm	163mm x 110mm x 51mm
Protection Class	IP40	IP40

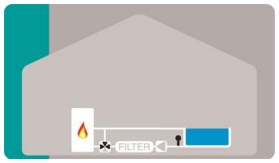
Hydraulic variants Pool TDC M



Pool with solar and ball valve

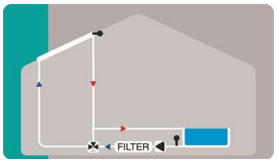


Pool with solar and additional pump

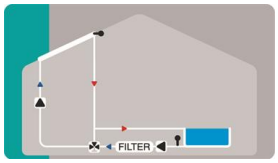


Pool with additional heating and ball valve

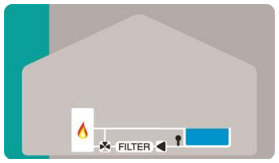
Hydraulic variants Pool TDC M+



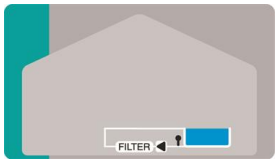
Pool with solar, ball valve and filter pump control



Pool with solar, additional pump and filter pump control



Pool with additional heating, ball valve and filter pump control



Pool with filter pumpcontrol

Recommended accessories & list prices

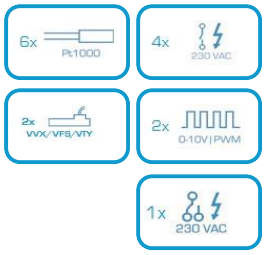
on request

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

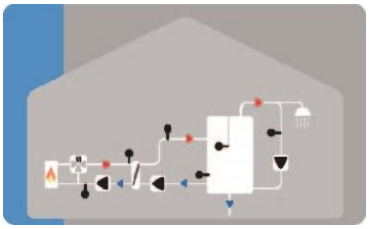
SLC - Storage Loading Controller

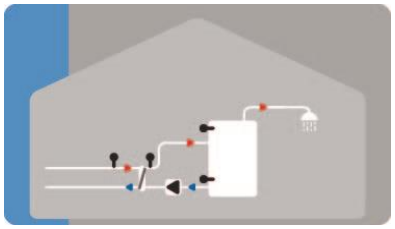
For temperature-accurate charging of large domestic hot water tanks, in connection with district heating networks, large heat pump systems or boiler cascades.

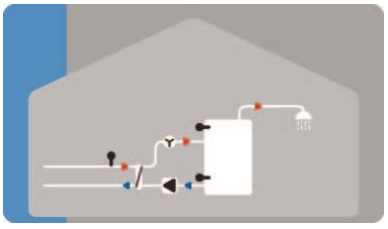
Inputs / Outputs	Connectivity	Menu Languages	New: function primary mixer integrated



Hydraulic variants SLC







Recommended Accessories

Data logger

→ Page 60

VVX / VFS / RPS Combined sensor

→ Page 63

Temperature sensors Pt1000

→ Page 61

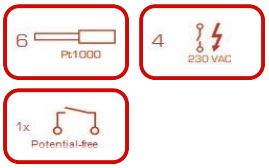
List Prices

Art. No. 47008 - SLC				
from quantity	1	5	10	20

WPC5 - Heat Pump Controller

Weather-compensated heat pump controller for 5 different heat pump systems with sole pump, compressor and heating circuit. Evaluation of external fault messages and EVU lock possible. Optionally also with domestic hot water and buffer storage.

Inputs / Outputs



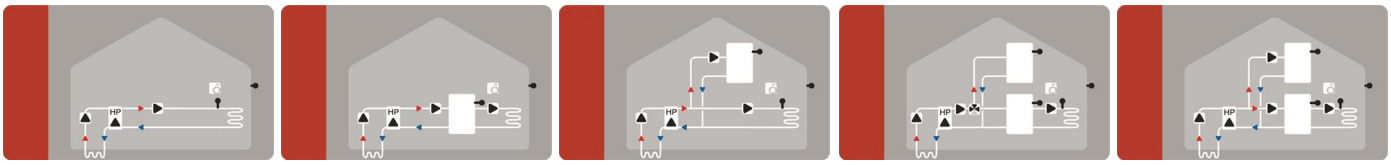
Menu Languages

Other controllers for heat pump applications with additional functions such as heating and cooling, second heat source and more see also: LHCC page **25**, XHCC page **27**.

For HP manufacturers, we are happy to develop customised solutions on an OEM basis.
Please contact us: oem@sorel.de

Technical Data	
LEDs red/green for display of operating status	✓
Battery-backed Real Time Clock > 24h	✓
Setup wizard	✓
Statistics and graphic analysis of data memory	✓
Seizing Protection	✓
Anti-freeze protection	✓
Function control and error memory with date and time	✓
Menu blocker	✓
Dimensions Height x Width x Depth in mm	163mm x 110mm x 51mm
Protection Class	IP40

Hydraulic variants WPC



Recommended Accessories

Temperature sensors Pt1000

→ Page 61

Immersion sleeves

→ Page 62

List Prices

Art. No. 35000 - WPC5				
from quantity	1	5	10	20

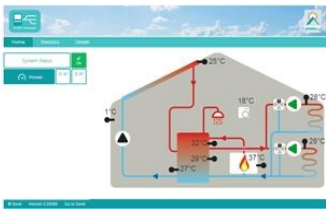
Art. No. 35500 - WPC5 with 1 sensor TA55 PT1000 and 4 sensors TT/ S2 PT1000				
from quantity	1	5	10	20

SOREL Connect - Monitoring and Analysis

SOREL Connect Controllers enable convenient system monitoring and data logging.

SOREL Connect is the 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 the Internet or via Ethernet. The user can monitor the system at any time and from any location via PC, tablet and smartphone.

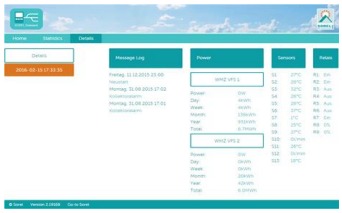
Key features (depending on version): visualisation of the heating system with status messages, Temperatures and heat yield statistics (only XHCC), influence the room temperature, activation of comfort boost (HCCs). Data logging is realised by a microSD card, so that all system data can be recorded and analysed extensively.



System overview

Energy statistics (only with active heat metering)

Temperature curves (only with active heat metering)



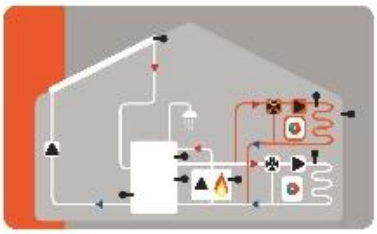
Technical details for the expert

Network Principle

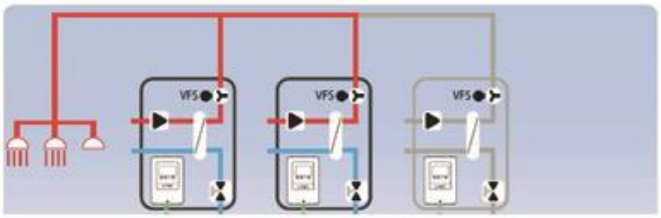
Application example: XHCC with direct Ethernet connection

Application example: MHCC with Ethernet connection via data logger

Network Principle



Application example: additional mixed heating circuit and 2 °CALEON Room Controllers



Application example: fresh water cascade

Data logger

For use with MTDC, LTDC, MHCC, LHCC, XHCC, MFWC and LFWC. The set consists of data logger, Micro SD-card, Ethernet interface, wall power supply, 1m CAN connection cable to the controller, licence for SOREL Connect.

Art. No. 77701 - Data logger set incl. power plug and connection cable				
from quantity	1	5	10	20

CAN connection box

CAN connection box for shielded CAN connection cables		
Art. no. 89200	CAN connection box for connecting up to 6 CAN CAN connection set 0.3m shielded twisted pair CAN connection cable 1x2x0.22mm with 2 Molex plugs 2 terminating resistors with Molex plugs for end devices	

CAN connection set

CAN connection set for connecting multiple controllers		
Art. no. 89210	CAN connection set 0.3 m shielded twisted pair CAN connection cable 1 x 2 x 0.22 mm² with 2 Molex plugs, 2 terminating resistors with Molex plugs for end devices	
Art. no. 89211	CAN connection set 1.00 m shielded twisted pair CAN connection cable 1 x 2 x 0.22 mm² with 2 Molex plugs, 2 terminating resistors with Molex plugs for end devices	
Art. no. 89213	CAN connection set 2.90 m shielded twisted pair CAN connection cable 1 x 2 x 0.22 mm² with 2 Molex plugs, 2 terminating resistors with Molex plugs for end devices	
Art. no. 89299	CAN connect set 6-wire by the metre shielded twisted pair CAN connection cable 3 x 2 x 0.22 mm² cable length selectable from 1 to 100m. Price per meter. **Price per meter**	
Art. no. 89298	1-wire connection cable, grey, sold by the metre. Shielded twisted pair 1-wire connection cable, 2 x 2 x 0.75 mm², especially for applications with several °C-lites and longer cable runs. Cable length selectable from 1-100 m. **Price per meter**	

Temperature sensors

Temperature sensors with PT1000 sensor elements - with guaranteed degree-accuracy according to DIN EN60751 (IEC751) - ensure precise recognition of the temperature difference and optimum use of energy.

Art. No. 85220 - TT/ S2 Temperature immersion sensor with 2 m silicone cable, 180 °C				
from quantity	1	20	50	100

Art. No. Art. no. 85240 - TT/ S4 Temperature immersion sensor with 4 m silicone cable, 180 °C				
from quantity	1	20	50	100

Art. No. Art. no. 85140 - TT/ P4 Temperature immersion sensor with 4 m PVC cable, 95 °C				
from quantity	1	20	50	100

Art. No. Art. no. 86325 - TT/ T2.5 Temperature immersion sensor with 2,5 m special cable, 220/ 300 °C				
from quantity	1	20	50	100

Art. No. 81220 - TR/ S2 Temperature pipe sensor with 2 m silicone cable, 180 °C				
from quantity	1	20	50	100

Art. No. Art. no. 81140 - TR/ P4 Temperature pipe sensor with 4 m PVC cable, 95 °C				
from quantity	1	20	50	100

Art. No. 85216 - TT/ S10 TP6 Temperature immersion sensor with 10 m silicone cable for swimming pool applications				
from quantity	1	20	50	100

Art. No. 85222 - Pt1000 double sensor - TT/ S2.5 temperature immersion sensor with 2.5 m 4-wire silicone cable, 180 °C				
from quantity	1	20	50	100

TA55 Temperature external sensor box

Art. No. 87005 - TA55 Temperature external sensor box				
from quantity	1	20	50	100

Threaded sensor

Art. No. 87118 - ES/ S1 G1/ 8"				
from quantity	1	20	50	100

Art. No. 87112 - ES/ S1 G1/ 2"				
from quantity	1	20	50	100

Immersion sleeves

Immersion sleeves R 1/2“ with PG7 cable threading and silicone seal, in various lengths and designs:

Art. No. Art. no. 91030 - TH30 with 30mm brass immersion pipe, 150°C				
from quantity	1	20	50	100

Art. No. Art. no. 91045 - TH45 with 45mm brass immersion pipe, 150°C				
from quantity	1	20	50	100

Art. No. Art. no. 90060 - TH60 w/ nickel-plated 60mm copper imm. pipe, 150/ 180 °C				
from quantity	1	20	50	100

Art. No. 90100 - TH100 w/ nickel-plated 100mm copper imm. pipe, 150/ 180 °C				
from quantity	1	20	50	100

Art. No. Art. no. 90150 - TH150 w/ nickel-plated 150mm copper imm. pipe, 150/ 180 °C				
from quantity	1	20	50	100

Art. No. Art. no. 90200 - TH200 w/ nickel-plated 200mm copper imm. pipe, 150/ 180 °C				
from quantity	1	20	50	100

Art. No. 90300 - TH300 w/ nickel-plated 300mm copper imm. pipe, 150/ 180 °C				
from quantity	1	20	50	100

Art. No. 90400 - TH400 w/ nickel-plated 400mm copper imm. pipe, 150/ 180 °C				
from quantity	1	20	50	100

Art. No. 92100 - TH100 Estainl. steel imm. sleeve 100mm, test prod up to 300°C				
from quantity	1	20	50	100

Art. No. 92150 - TH150 Estainl. steel imm. sleeve 150mm, test prod up to 300°C				
from quantity	1	20	50	100

Art. No. 92200 - TH200 Estainl. steel imm. sleeve 200mm, test prod up to 300°C				
from quantity	1	20	50	100

1-Wire Sensors for °CALEONbox

Optional sensors for use with °CALEONbox (see p. 6).

Pipe-mounted sensor 1-Wire

Art. No. 80101 - Pipe-mounted sensor 1-Wire 0,6m				
from quantity	1	20	50	100

Floor Temperature Sensor 1-Wire

Art. No. 80102 - Floor Temperature Sensor 1-Wire 2m				
from quantity	1	20	50	100

Outdoor sensor 1-Wire

Art. No. 87006 - TA56 Outdoor Sensor 1-Wire				
from quantity	1	20	50	100

Sensor

VFS sensor for combined flow and temperature measurement

no moving parts in the fluid, minimal permanent pressure loss, no increasing measurement deviation due to wear-out, „2 in 1 Sensor“ - flow and temperature in one sensor

VFS 1-12L/ Min 0-100°C, 3/ 4“AG, stainless steel	Art. No. 78018
VFS 2-40L/ Min 0-100°C, 3/ 4“AG, stainless steel	Art. No. 78040
VFS 5-100L/ Min 0-100°C, 1“, stainless steel	Art. No. 78100
VFS 10-200L/ Min 0-100°C, 1 1/ 4“ stainless steel	Art. No. 78200
VFS 20-400L/ Min 0-100°C, 1 1/ 2” plastic	Art. No. 78400

VVX15 combined sensor for flow and temperature measurement

for details see VFS combined sensor especially robust, sensor element separated from medium

VVX15 2-40L/ Min 0-100°C, 3/ 4“AG, plastic	Art. No. 78041

RPS - sensor for combined pressure and Temperature measurement

No moving parts in the fluid, precise pressure sensor, temperature compensated and linearized, „2 in 1 sensor“ - pressure and temperature in one sensor

RPS-sensor 0-10 bar 2,9m cable	Art. No. 78600

Relays

External relay 1W 10A in protective casing, to be used where e.g. outputs of the controller shall be operated potential-free, the control power of the controller is not sufficient.

coil voltage	9-230V AC/DC	max. switching voltage	250VAC
switching contacts	1 change over contact	max. switching current	10A at AC1
case protection category	IP55		

Relay IFR/ 1W	Art. No. 77500

External switching relay 4 NO 24A in the protective housing is to be used wherever the switching capacity of the controller is not sufficient when multi-pole switching is required, as for example with three-phase electric heating rods.

coil voltage	230VAC	max. switching voltage	400VAC
switching contacts	4 closing contact	max. switching current	24A for AC1
case protection category	IP30		

Relays 4S x 24A	Art. No. 77501

External relay 1W 6A in protective casing, to be used where the 0-10V outputs of the controller shall be operated potential-free

coil voltage	9-12VDC	max. switching voltage	250VAC
switching contacts	1 change over contact	max. switching current	6A bei AC1
case protection category	IP55		

Relay 1W 6A	Art. No. 77502

Other accessories

Overvoltage protection for collector sensor in 90 x 35 x 38 mm conduit box

Art. No. 77600 - KA12 Overvoltage protection for collector sensor in branch box				
from quantity	1	20	50	100

100 pieces fuse 2A isolated, slow blow, boxed

Art. No. 09028 - 100x fuse 2A slow blow	
€/per piece	

IP44 seal Set

Art. No. 06442 - IP44 Seal Set	
€/per piece	

Switching power supply 24VDC 12W

- 100 - 240VAC
- 24VDC 0,63A
- E.g. suitable as a power supply for up to 6 °CALEON room controllers or for other external devices.
- including wall-mounted housing

Art. No. 77505 - Switching power supply 24 VDC 12W	
€/per piece	

Switching power supply 24VDC 30W

Art. No. 77507 - Switching power supply 24 VDC 30W	
€/per piece	

Substitutes for controllers of previous series

This table indicates which new controller succeeds those of previous series. These recommendations are non-binding and do not replace your own examination if the controller meets your requirements.

Previous model	Recommended Controller
TDC 1	MTDC
TDC 2	MTDC
TDC 3	MTDC
TDC 4 without VFS	MTDC/LTDC
TDC 4 with VFS	LTDC
TDC 5	LTDC
SD 01	STDC
SD 01/f	SBMC
DR 01	STDC
DR 01F	SBMC
DR 1	STDC
DR 1S	STDC
DR 1F	SBMC
DR 2	MTDC
DR 3	MTDC
DR 4	MTDC/LTDC
DR 5	LTDC
HR3	MHCC
HCC3	MHCC
HCC4/HCC5/HCC6	LHCC
MR...	XHCC
SR...	XHCC

OEM

From concept to implementation are we reliable partner of product managers in the heating industry. No matter if for white label versions of existing controls, with adapted hardware and software, or as a new development according to your wishes: being a specialist for digitisation, electronics and IT, we enhance your heating product for joint success.

What you can count on as our OEM customer:

Co-engineering

We like to go beyond working through fixed specifications by contributing as a technical **sparring partner**. In this way, we develop your ideas further together, propose alternative courses of action and optimisations, provide support in the selection of components and suppliers and sometimes even question the original specifications if it benefits the outcome. In the end, what counts is the technical functionality and market success of your product.

Continuity

Your OEM contacts are experienced technicians with an average of **12 years** of operating and industry experience. They know the application side of your products, as well as our own development processes in electronics and software. Our business relationships are also lasting: our average OEM customer has been loyal to us for over **9 years** and entrusts us with an average of **3** additional OEM projects after the initial project.

Pragmatism

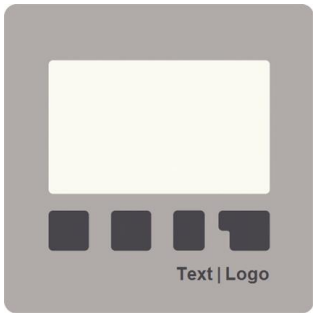
Whenever circumstances require it, we go the extra mile for our OEMs. For example, we sent a technician at short notice to a steel factory close to our headquarters for troubleshooting an urgent hydraulic problem on behalf of an Italian customer – the system was then up and running again. We spontaneously put our production hall and two technicians at the disposal of another customer to build a functional prototype in a rush to win a major project. We flew from Germany to Madrid and optimised an important reference plant for a good customer. And we travelled with a customer through Eastern Europe to provide support in design, component dimensioning and supplier selection for the development of a hydraulic station. We cannot solve everything, but **we will never let you down without a fight**.

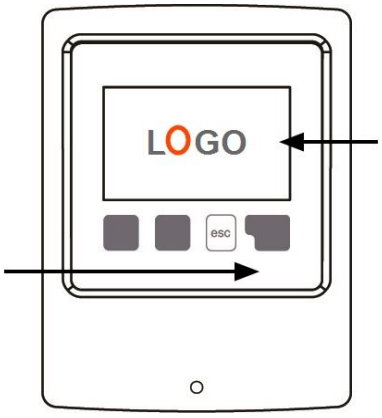
You will find your OEM options on the following pages →

Customization

Special net prices, not subject to discounts

Customization S Controllers



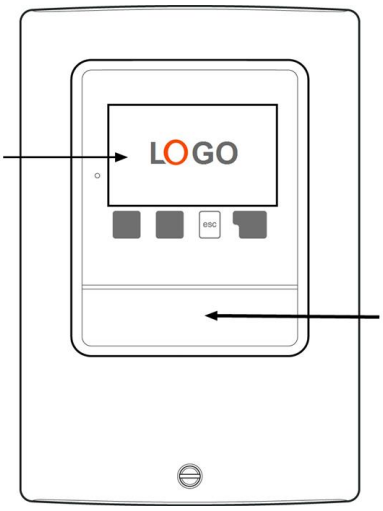


Company logo in display at startup	
One off cost	

STDC front label, plastic, up to 4 colours	
€/per piece	
Minimum order quantity	1.000 front labels

Customization M, L and X Controllers

Company logo in display at startup	
One off cost	



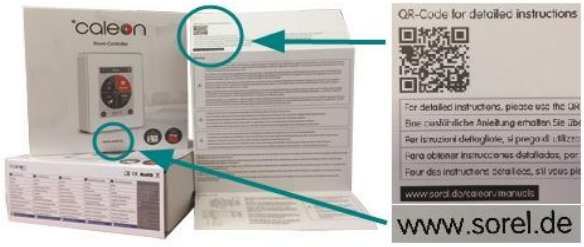
TDC/ HCC.. front label, paper paperstrip in a transparent plastic window	
€/per piece	
One off cost	

TDC/ HCC front label, plastic, up to 4 colours	
€/per piece	
Minimum order quantity	500 front labels

Customization °CALEON

°caleon

Company logo in display at startup and before standby	
One off cost	



Cardboard sleeve and manual for °CALEON	
€/per piece	
Minimum order quantity	500
One off cost	

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.
SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

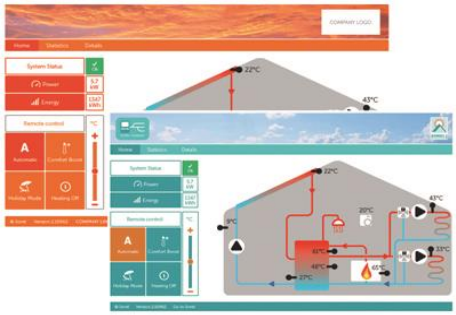
Customized app

Customization °CALEON app Customization of color, font and icons and launch in appstore	
One off cost	
Service fees/year	

Customized app with custom functionality	
	on request

Customization °CALEON App Pro Allows remote access for any number of users to any number of assets instead of individual licenses (p. 19), and set up your own pricing models for your customers. Requires personalized °CALEON app.	
One off cost	
Service fees/year	

Customized SOREL Connect Page



Art. No. Art. no. 77770 SOREL Connect Page - Adaption of header (graphics, logo), sidebar (colour, text) and footer (text, link and colour)	
One off cost	

Customized packaging

Customized bar code and type plates (Dimensions 70 x 22 mm)	
One off cost	

Additional manual (e.g. other languages)	
€/per piece	

Parcel stickers / packaging bags (Dimensions: 70 mm x 25.4 mm, b/ w)	
€/per piece	
One off cost	

Sensors in labeled plastic bags	
€/per piece	
One off cost	

Customized manual (customer's logo, name, address, contact information)	
One off cost	

Prices ex works, excl. sales tax. Terms and conditions as can be seen on sorel.de shall apply. Discount on request.

SOREL GmbH, Reme-Straße 12, 58300 Wetter, T +49 2335 682 77 0, F +49 2335 682 77 10, www.sorel.de, info@sorel.de

Adaptions

For special requirements, we happily extend our controls by the desired hardware or software features. On request, we supply your controls with customer-specific pre-parametrisation as a plug & play solution to simplify the installation – for individual systems as well as in series.

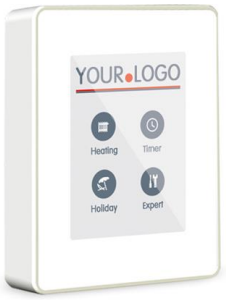
Please contact us: oem@sorel.de

Development Service

You want to implement your own product idea and are looking for a professional partner who turns fiction into reality with you? With more than 25 years of practical experience in electronics and software development for the heating industry, we take your products to the digital age!

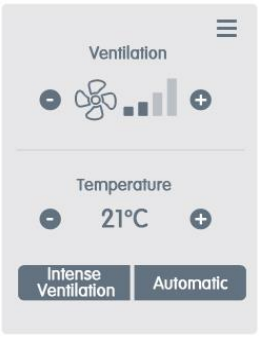
Please contact us: oem@sorel.de

OEM Touchpanel

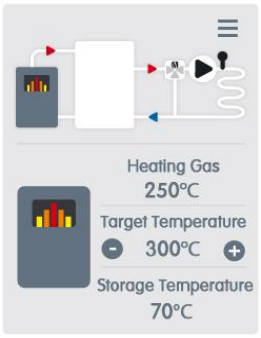


Based on our classy control panel with capacitive TFT touch display and elegant glass cover, we are pleased to develop an individual product for your application together. Using the existing hardware, operating system and various software modules is the smartest way towards your specific solution with reasonable development effort.

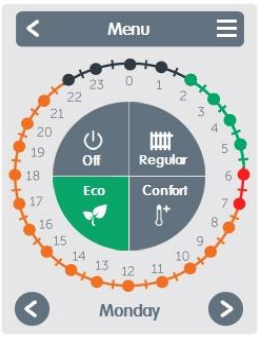
Application Examples



Ventilation Control (2.8“)

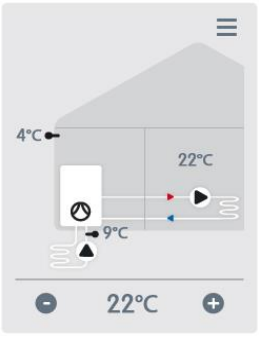


Wood-Burning Stove Control(2.8“)

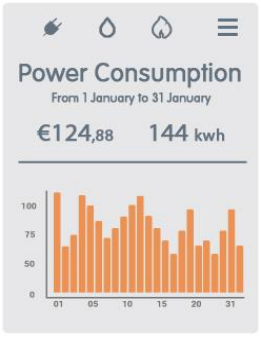


Universal Timer (2.8“)

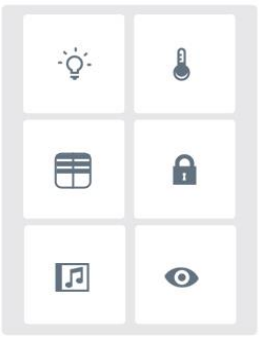
Smart Thermostat (2.8“)



Heat Pump Control (3.5“)



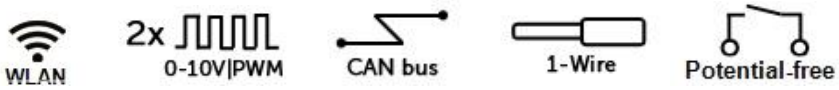
Energy Manager (3.5“)



Smart Home Central Unit (3.5“)

System Controller for Boiler Panels (4.3“)

Hardware Options



Please contact us: oem@sorel.de

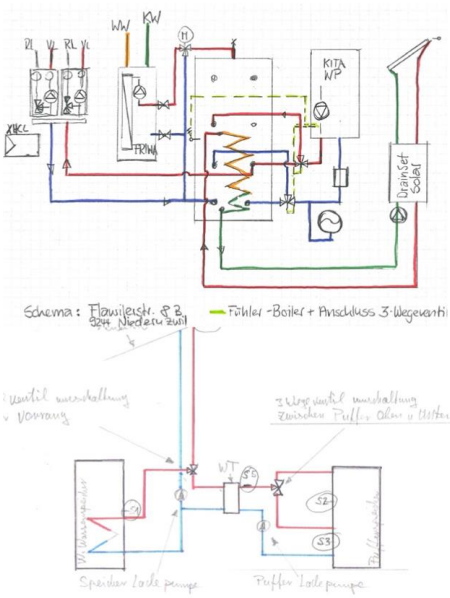
Pre-wiring

Pre-wiring ex works strongly simplifies the installation on site. It saves time during assembly, prevents mistakes and provides a cost advantage due to the industrial wiring in large quantities. We happily arrange the right solution for your application from our broad selection of ready-for-use cable types and lengths.

Please contact us: oem@sorel.de

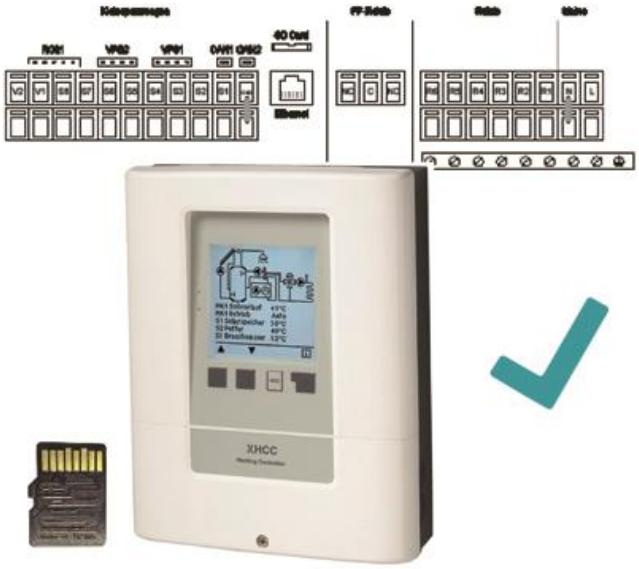
System-Dependent Pre-ParametrIsatIon

1. Send hydraulic plan with short description



@

2. Receive preset controller with clamp connection plan



Manual presetting of the controller adapted to the system of the customer. The price includes a simple sheet with allocation of the appliances like pumps and valves and the Temperature sensors.

Art. No. 06899

PC Simulation

Handy tool for marketing, training and self-study. Available for every SOREL controller. Request now at simu@sorel.de.

SOREL GmbH Mikroelektronik
Reme-Straße 12
58300 Wetter (Ruhr) | Germany
Telefon: +49 (0) 2335 68277-0
Fax: +49 (0) 2335 68277-10

Geschäftsführung
Georg Bicher
Jonas Bicher
E-Mail: info@sorel.de

Sparkasse Schwelm-Sprockhövel
BLZ 452 515 15
Konto 10991
Swift/BIC-Code SPSHDE 31 XXX
IBAN-Code DE 2545 2515 15 00000 10991
Amtsgericht Hagen
HRB 10189
USt-Id-Nr. DE 125 315 635

Technical support
Telefon: +49 (0)2335 68277-66*
Fax: +49 (0)2335 68277-10
E-Mail: support@sorel.de

Order Management
Martin Michalski
Radegundis Albus
Silke Tombrink
Jason-Christopher Heinrichsmeier
Phone: +49 (0) 2335 68277-0
Fax: +49 (0) 2335 68277-10
E-Mail: auftrag@sorel.de

Technical management / OEM support
Christian Zänker
E-Mail: c.zaenker@sorel.de

Sales Management
Andreas Hölscher
E-Mail: a.hoelscher@sorel.de

Technical documentation / design
Christiane Schulze
E-Mail: c.schulze@sorel.de

Follow us on Linkedin
linkedin.com/company/sorel-gmbh

Visit us on YouTube
sorel.de/youtube

Follow us on Facebook
facebook.com/sorel.de

General notes:
This price list is valid as of May 1st, 2022. Supersedes any previously issued price list(s). SOREL GmbH Mikroelektronik (SOREL) reserves the right to change specifications and pricing without notice. Any errors or omissions within this document are unintentional and may be subject to revision at any time by SOREL.
The illustrations should be viewed only as schematic diagrams showing the respective hydraulic systems, and do not claim to be complete. The controller does not replace safety devices ander any circumstances. Depending on the specific application, additional system components and safety components may be mandatory, such as check valves, non-return valves, safety temperature liwithers, scalding protectors, etc., and must therefore be provided.
The quoted prices are to be anderstood per unit ex works (EXW according to Incoterms) Wetter (Ruhr) plus VAT. Standard customer discounts apply to orders over 50 €. Freight costs are charged depending on the required workload. Discounts are granted upon written request. Versions may differ from the illustrations. Subject to change without notice. The current terms and conditions of SOREL GmbH Mikroelektronik as can be seen on www.sorel.de shall apply. Actual products may differ from images. All rights reserved.

8/8/2022
* 0,14 EURO/Min. aus dem Festnetz der T-Com. Mobilfunk max. 0,42 EURO/Min. (only for Germany)