ENGLISH

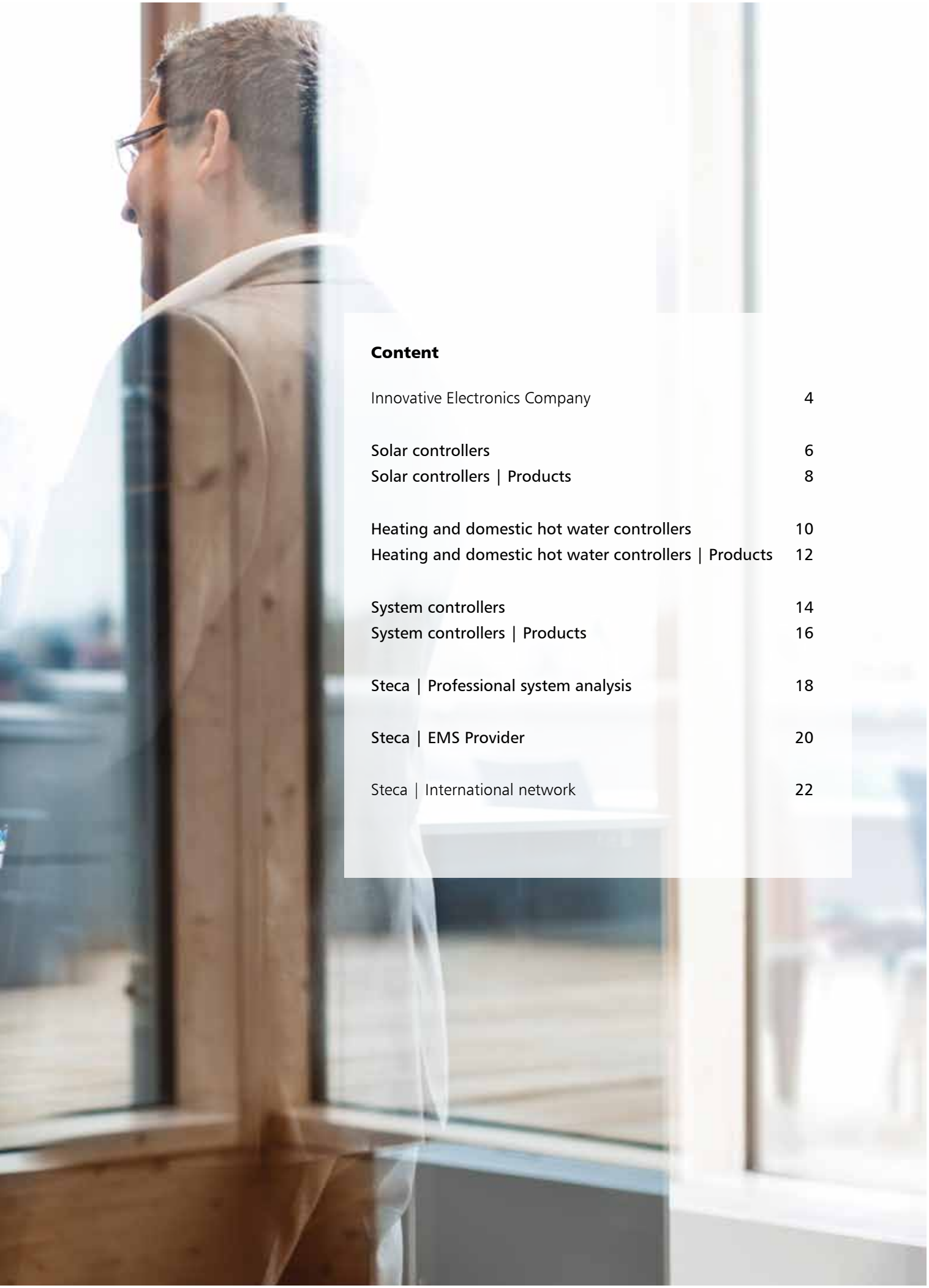
Steca Elektronik

SOLAR THERMAL

Taking control for you.

Steca

STRONG SOLUTIONS POWERFUL PARTNERS



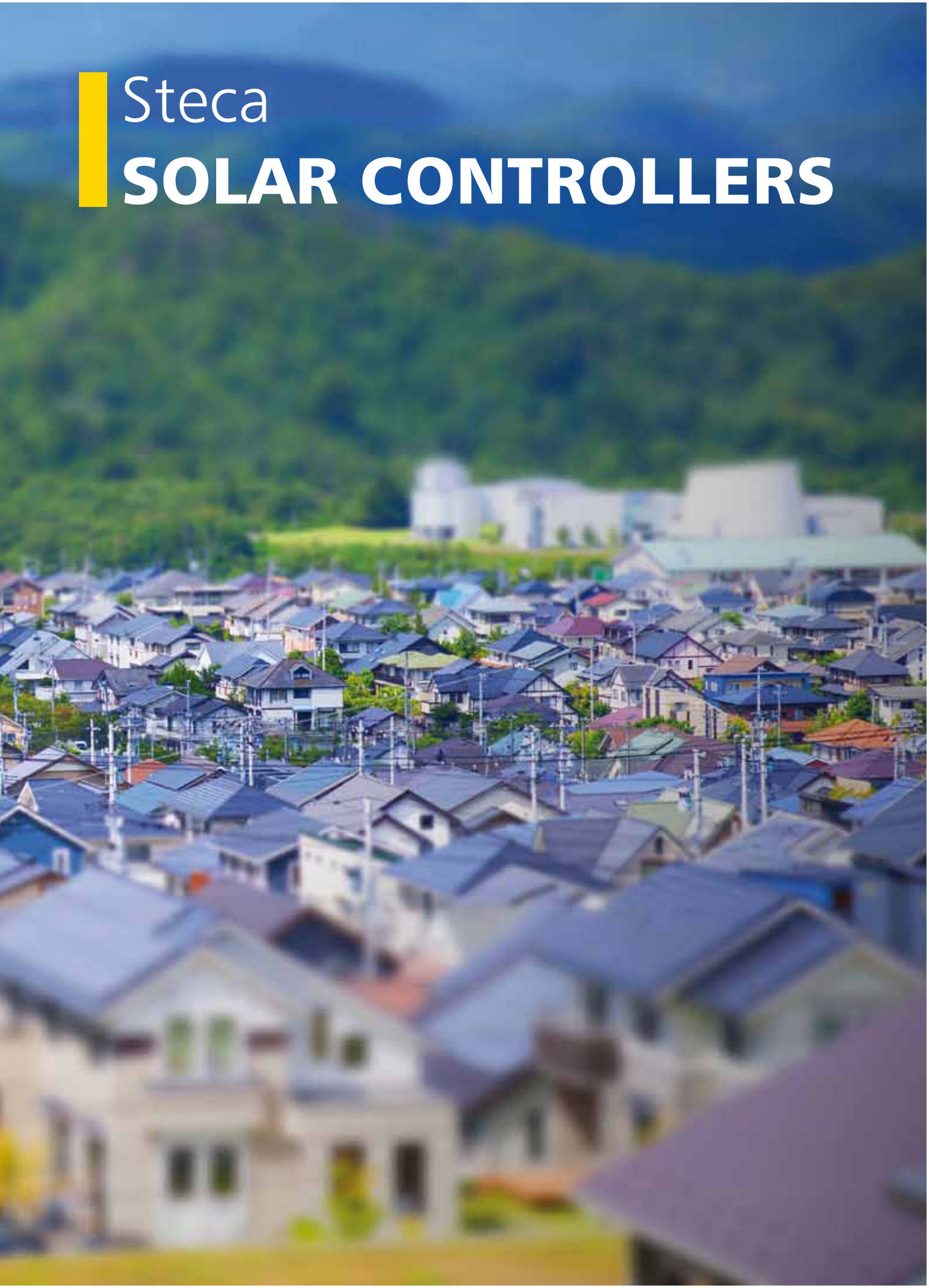
Content

Having posted sustained growth as an innovated electronic company, we pool many years of experience and innovative strength both as a manufacturer of Steca-branded product lines in solar electronics and as an electronics service provider.

Nowadays, we are highly diversified as an electronics service provider and supply our partners around the globe. We carry out our production operations on an area measuring over 29,000 square metres with more than 750 employees. Our plant at the Memmingen site and a plant in Bulgaria ensure your product's success.

As part of the PRIMEPULSE Group, Steca has an international network and a firm foundation for strategic growth.

Innovative **ELECTRONICS COMPANY**



Steca
SOLAR CONTROLLERS

SOLAR CONTROLLERS

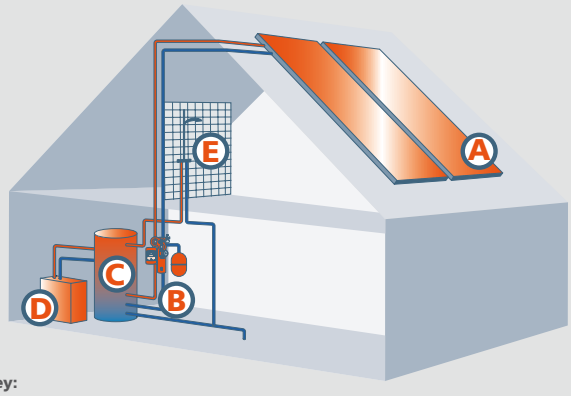
as temperature differential controllers

The transport of heat from the collector to the storage tank is controlled according to the temperature difference. The controller starts the circulation pump of the solar circuit as soon as the temperature in the collector is several degrees warmer than the temperature at the bottom of the storage tank. This transports the solar fluid from the collector to the lower heat exchanger, where the heat is transferred to the drinking water in the storage tank via the solar circuit heat exchanger. The cooled solar fluid then flows back to the collector in the return pipe.

The heated drinking water rises in the storage tank. The water is stratified in the storage tank according to its density or temperature: the hottest water is at the top (where it is tapped), the coldest water is at the bottom (where cold water is fed in).

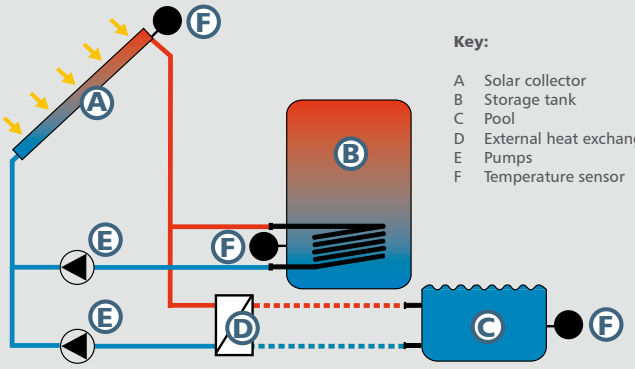
With the current standard system size for one to two family houses (approx. 1.0 to 1.5 m² collector surface per person and approx. 80 to 100 l storage tank volume), in summer, the drinking water is primarily heated by the solar energy system. This results in an annual solar coverage (percentage of the total energy requirement for heating drinking water provided by solar energy) of approx. 60 %. The remaining 40 % must be covered by back-up heating. This is generally provided by a boiler and by the upper heat exchanger for back-up heating, which is located in the storage tank.

You can select a tailor-made controller from the Steca solar thermal controller product family based entirely on the requirements of your solar energy system. A range of monitoring and control functions guarantee that your solar system runs safely and maximise its service life.



Key:

A Solar collector
B Solar pump station
C Storage tank
D Boiler
E Water withdrawal



Key:

A Solar collector
B Storage tank
C Pool
D External heat exchanger
E Pumps
F Temperature sensor

Overview of devices

Steca TR 0201
2 inputs
1 output

Steca TR 0301
3 inputs
1 output

Steca TR 0301sc+
3 inputs
1 output

Steca TR A301 PWM
3 inputs
1 additional input for Grundfos Direct Sensors™
1 PWM-output

Steca TR A501 T
5 inputs
1 output

Steca TR A502 TT
5 inputs
2 outputs

Steca TR A503 TTR
5 inputs
2 additional inputs for Grundfos Direct Sensors™
3 outputs

Steca TR 0603mc+
6 inputs
1 additional input for Grundfos Direct Sensors™
3 outputs

Accessories

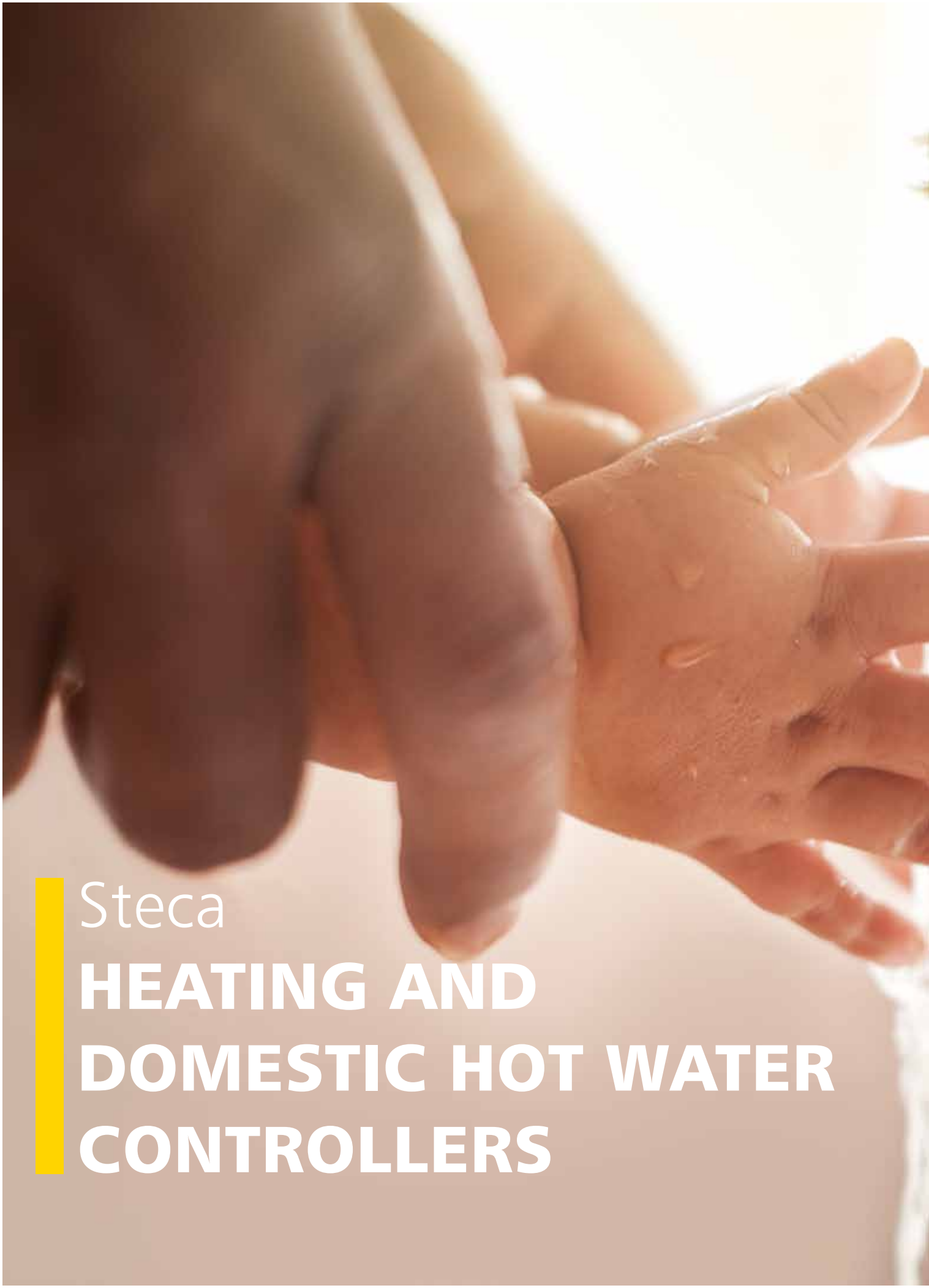
Steca TA OP1
Overvoltage protection

Steca TA VM1 and Steca TA VM2
Flow meter

Steca Pt1000
Immersion sensor

Steca Pt1000 RAF
Pipe sensor

Steca Pt1000 MWT
Mantelwiderstands-thermometer



Steca

HEATING AND DOMESTIC HOT WATER CONTROLLERS

HEATING AND DOMESTIC HOT WATER CONTROLLERS

Before saving energy became relevant in everyday life, people regulated the temperature in their homes simply by opening and closing the manual valves on the radiators: this required a constant high temperature (70°C to 90°C) of the water in the boiler. This is anything but resource-saving heating technology!

The use of so-called mixers represents significant progress in this area: they direct cooled return water to the hot boiler or buffer storage tank water, to ensure that the supply temperature (temperature of the heating water flowing to the radiators and underfloor heating system) complies with the actual heat requirement. The heating circuit controller controls this process depending on the room or external temperature.

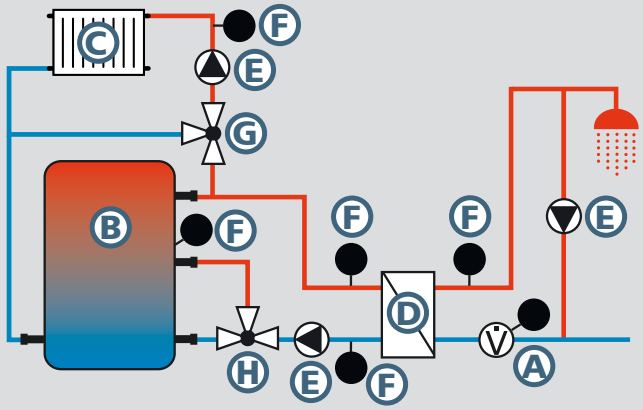
The automatic heating circuit controller is the most energy-efficient type of heating circuit control. A constant comparison of the external or guide room temperature with the selected room temperature keeps the losses in the piping system as low as possible via constant adjustment of the supply temperature.

Heating drinking water energy-efficiently and hygienically is the responsibility of demand-dependent fresh water technology. It considerably reduces the risk of contamination and legionella multiplication.

If fresh water is withdrawn, the domestic hot water controller detects the removal and has the discharge pump withdrawn hot water from the buffer storage tank via the plate heat exchanger. The plate heat exchanger heats the water using the continuous flow heater principle. The domestic hot water controller controls the pump speed of the discharge pump so that the hot water temperature is kept constant at the value set even if the withdrawal quantity changes.

This intelligent control system guarantees low return temperatures to the buffer storage tank and unrestricted hot water comfort.

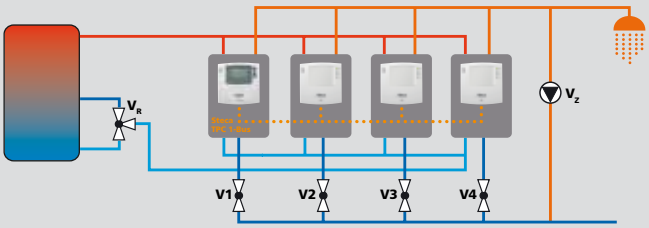
Fresh water technology is the ideal addition to all heating systems which use buffer storage tanks: e.g. solar thermal systems, wood-fired boilers, heat pumps and water heating stoves.



Key:

A Flow rate meter
B Storage tank
C Radiator
D External heat exchanger
E Pumps
F Temperature sensor
G Mixer
H 3-way valve

Four-stage cascade:



Application of the heating controller Steca TH A603 M (Master)

Overview of devices

Steca TH A603 M
Heating controller
6 inputs
1 additional input for flow rate sensor
3 outputs

Steca TH A603 MS
Heating controller (Slave)
6 inputs
1 additional input for flow rate sensor
3 outputs

Steca TH B402 M
Return flow mixing controller
4 inputs
2 outputs for return flow mixing

Steca TR A501 T
Solar controller
5 inputs
1 output

Steca TF B001
DHW controller (compact)
1 input
1 output

Steca TF B202
DHW controller (compact)
2 inputs
1 additional input for flow rate sensor
2 outputs

Steca TF A603 MC+
DHW controller (stand-alone)
6 inputs
1 additional input for flow rate sensor
3 outputs

Steca TF A603 MCK+ und Steca TF A603 KS+
DHW controller (Master and Slave) each
6 inputs
1 additional input for flow rate sensor
3 outputs

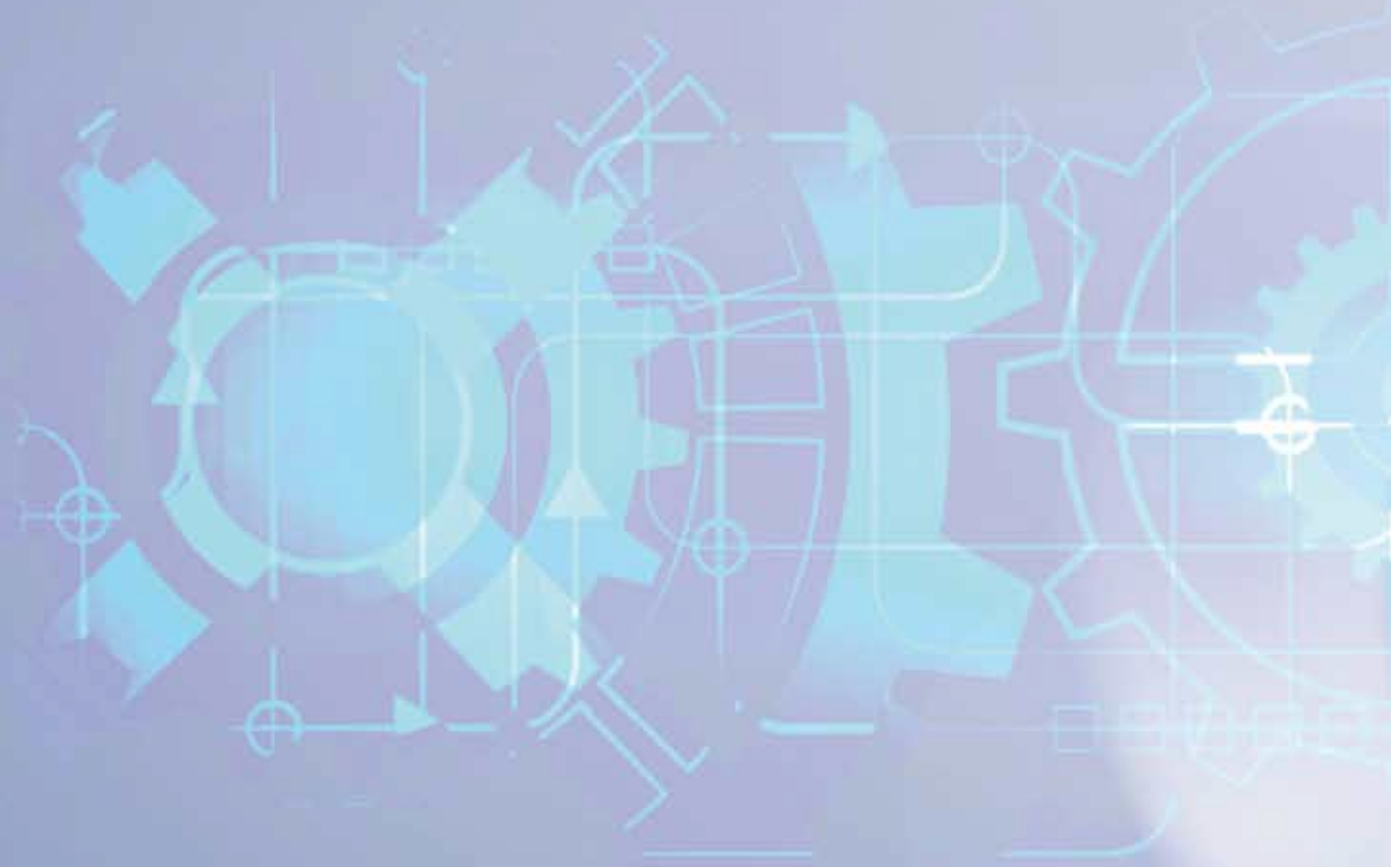
Accessories

Steca TA AF1
Remote control for the heating controllers Steca TH A603 M and Steca TH A603 MS

Steca TA FV1
External temperature sensor for the heating controllers Steca TH A603 M and Steca TH A603 MS

Steca

SYSTEM CONTROLLERS



SYSTEM CONTROLLERS

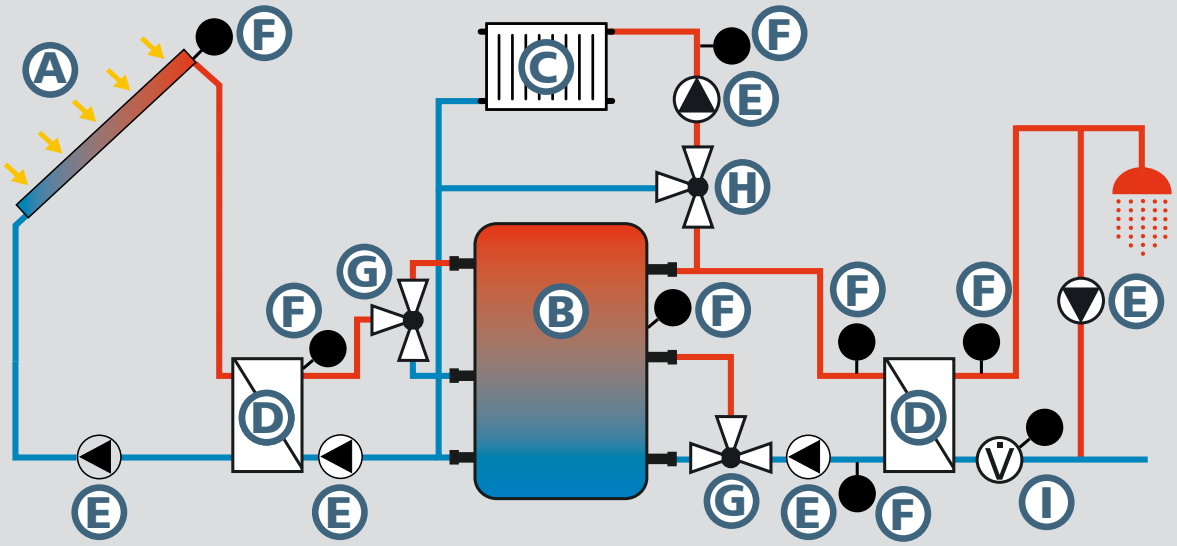
Increasing energy prices drive the operating costs for room heating and drinking water heating ever upwards. Greater use of renewable energy sources is the only way to become gradually more independent of this trend. Using less fossil fuels has a desirable side effect: a significant reduction in CO_2 emissions.

So-called system controllers are designed to maximise the heat yield of these complex systems – they are specialised in optimising the interaction of various heat sources, hydraulic versions and loads.

The Steca system controllers fulfill these demands: their intelligent control concept guides the heat management of the entire system and guarantees convenient, demand-oriented and reliable provision of heat primarily from renewable energy sources, always focusing on maximum system efficiency.

This is proven by the recorded measurement data which documents yields and consumption; remote data transmission, visualisation and analysis software replace cost-intensive on-site maintenance of the system.

The Steca system controllers offer also high flexibility and modularity: in addition to numerous pre-programmed hydraulic versions, optional functions allow individual integration in the existing hydraulic system. Expansion modules allow the system to be expanded.



Key:

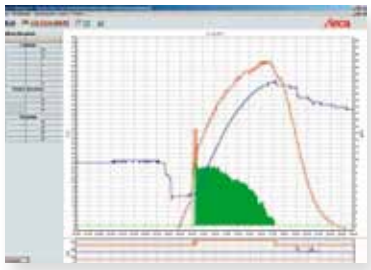
A	Solar collector	F	Temperature sensor
B	Storage tank	G	3-way valve
C	Radiator	H	Mixer
D	External heat exchanger	I	Flow rate meter
E	Pumps		

Overview of devices

Steca TR 0603mc+
Solar controller as system controller
6 inputs
1 additional input for flow rate sensor
3 outputs

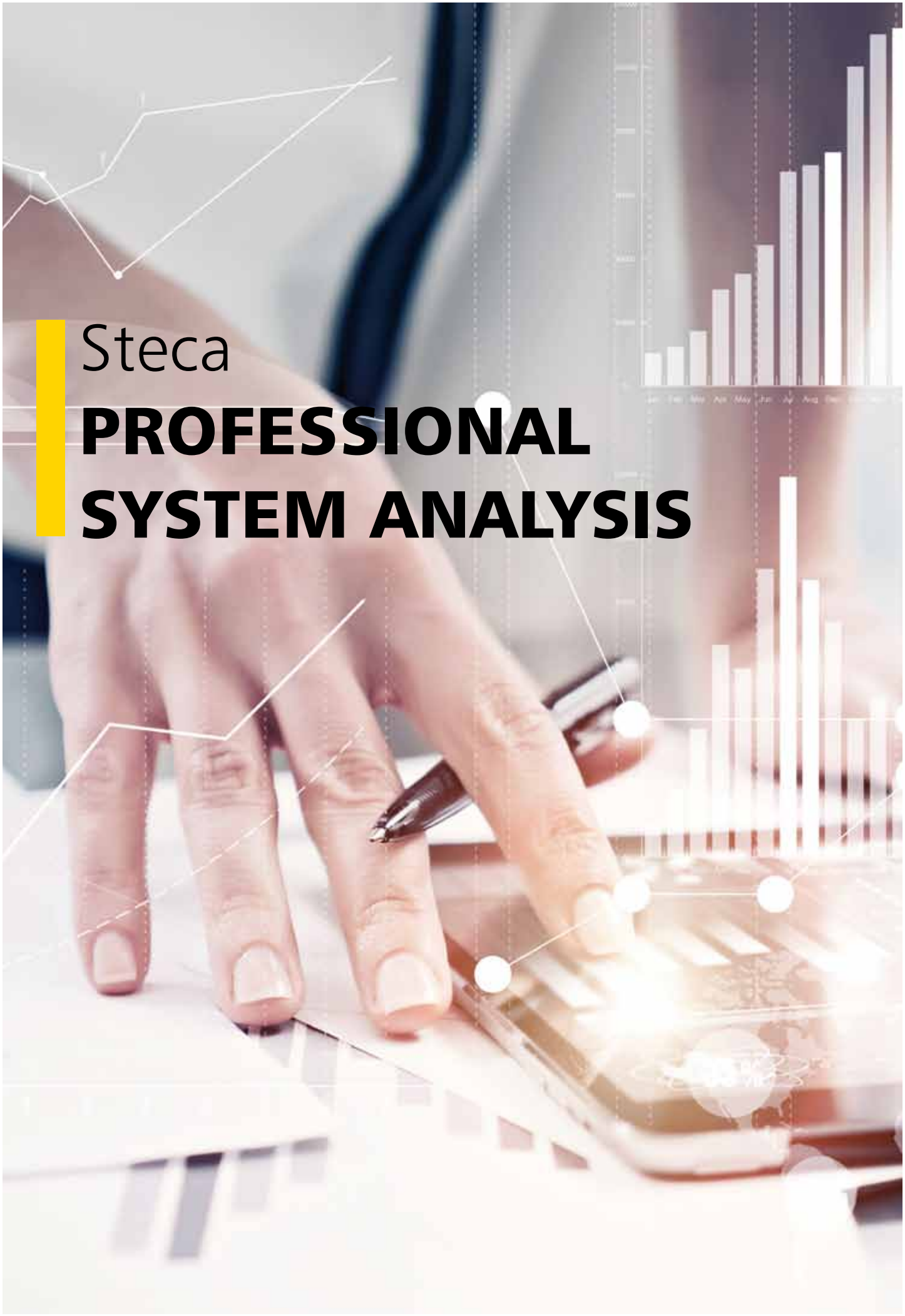
Steca TH A603 M
Heating controller as system controller (Master)
6 inputs
1 additional input for flow rate sensor
3 outputs

Steca TH A603 MS
Heating controller (Slave)
6 inputs
1 additional input for flow rate sensor
3 outputs



Steca TS Analyzer 2
Analysis software for solar controllers

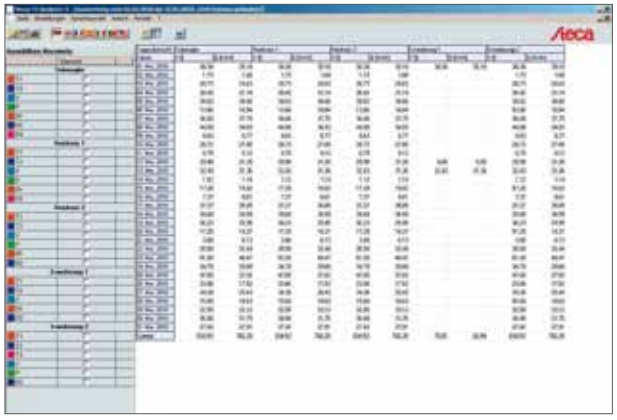
Example of application: System controller Steca TR 0603mc+ with the heating controller Steca TH A603 MS


Steca
PROFESSIONAL
SYSTEM ANALYSIS

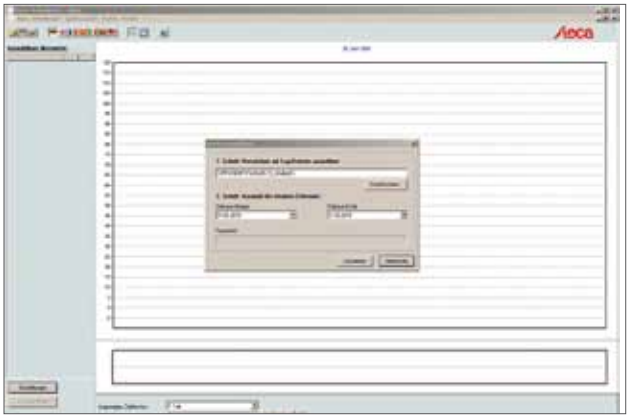
SYSTEM ANALYSIS
with the Steca TS Analyser 2 software

The solar controllers Steca TR A503 TTR and Steca TR 0603mc+ are able to log all operating data of the solar system directly to a SD card. The analysis software Steca TS Analyzer 2 is visualizing all that data: temperatures, operating times of pumps, heat flow volume und flow – to get comparisons all measurements are visualized in plots even in longer timeframes.
In master-slave mode the data of every node can be analysed seperatly and compared to others. The monitoring is completing the documentation: The state of the solar system, errors and alarms will be displayed. The software is also featuring an export to spreadsheet processing.

Because of this digital data acquisition and the convenient views in the software the user is always in focus of the performance of the solar system. The free monitoring software is also very easy to use and configure individually.
Steca TR A503 TTR and Steca TR 0603mc+ paired with the free Software Steca TS Analyzer 2 will continue the success of the globally sold solar controller series of Steca.



Heat quantity in table form



System data based on a hour, day, month, quarter or annual profile

Steca
EMS PROVIDER

Steca is certified according to
- ISO 9001
- ISO 14001
- ISO 50001
- ISO/TS 16949

Steca is audited according to
- EN ISO 13485

Steca guarantees top quality, safety and reliability, and places considerable emphasis on environmental compatibility during the development, construction, manufacture and distribution of its products. In order to reach these quality targets, Steca employs quality control and quality improvement strategies.

STECA Quality

Use the synergies by the know-how from different business segments and product areas for which we deliver electronic components and modules:

HOME APPLIANCES & CONSUMER ELECTRONICS

- Refrigerators and freezers
- Electrical equipment
- Heating controllers
- Cable assemblies

AUTOMOTIVE

- Controls for auxiliary heating systems and sliding car roofs
- Power distribution modules / fuse modules
- LED lighting systems for car interieur

MEDICAL TECHNOLOGY

- Dental technology for practice and laboratory facilities
- Mobile heart defibrillators
- Microscopy systems
- Pipette systems for analysing solids and fluids

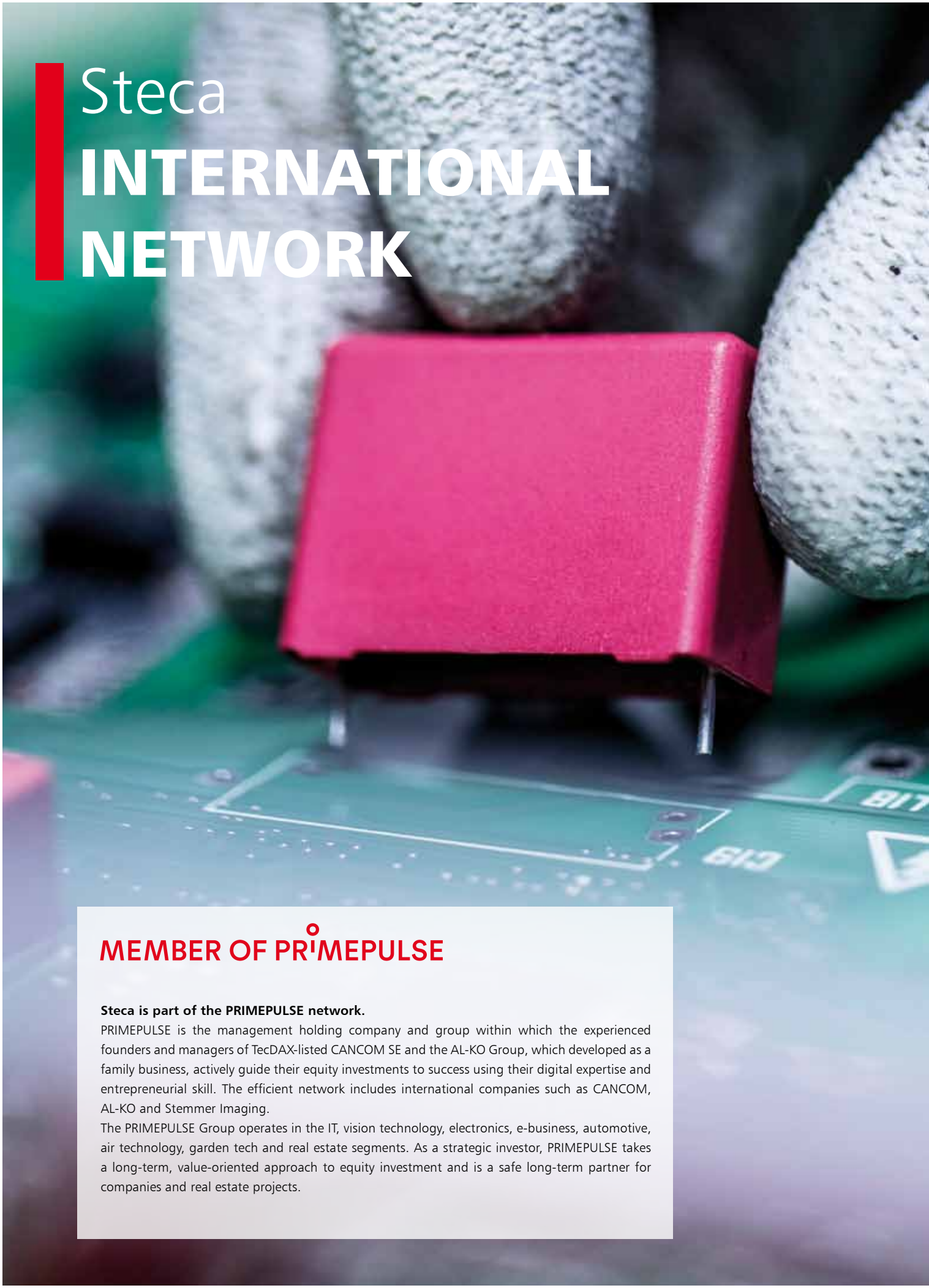
INDUSTRIAL ELECTRONICS

- Step motor controls
- Pump controls
- Sensors
- Welding machines
- Packing machines
- Control units (HMI)

SOLAR & ENERGY

- Grid inverters for residential systems
- PV off grid
- Solar charge controllers
- Solar thermal controllers
- Heating and domestic hot water controllers
- Battery charging systems

Steca INTERNATIONAL NETWORK



MEMBER OF PRIMEPULSE

Steca is part of the PRIMEPULSE network.
PRIMEPULSE is the management holding company and group within which the experienced founders and managers of TecDAX-listed CANCOM SE and the AL-KO Group, which developed as a family business, actively guide their equity investments to success using their digital expertise and entrepreneurial skill. The efficient network includes international companies such as CANCOM, AL-KO and Stemmer Imaging.
The PRIMEPULSE Group operates in the IT, vision technology, electronics, e-business, automotive, air technology, garden tech and real estate segments. As a strategic investor, PRIMEPULSE takes a long-term, value-oriented approach to equity investment and is a safe long-term partner for companies and real estate projects.

For you on-site.
With two locations, Steca can combine the quality and flexibility of a German provider with the advantages of low-cost production abroad. Enthusiastic and motivated staff on site, an experienced international and multilingual sales team as well as many sales partners and authorised wholesalers worldwide make Steca a significant company on both a national and international scale.

Memmingen | Germany
Foundation 1976 | 450 employees
- Research and development
- Industrialisation
- Marketing, sales, puchasing
- Production
- Service

Saedinenie | Bulgaria
Foundation 2006 | 300 employees
- Industrialisation
- Purchasing
- Production



731.593 | 06.2018

Steca Elektronik GmbH
Mammostraße 1
87700 Memmingen
Germany
T +49-(0)8331-8558-0
F +49-(0)8331-8558-131
info@steca.com
www.steca.com

facebook.com/StecaElektronik

youtube.com/c/StecaElektronik