

Energy-efficient room automation

Be inspired by flexibility



Lower costs, more comfort

SBC room automation combines both – without compromises

Everyone is talking about energy efficiency. And buildings have tremendous potential in this respect. It's all about reducing operating costs and CO₂ emissions as well as protecting the environment. Networked room automation is the key to boosting energy efficiency while maintaining a high level of comfort. The more automation goes into buildings and rooms, the greater the possible energy savings. SBC offers you everything for this from a single source.



What standards recommend and what our products accomplish

Different countries have different standards. There are many recommendations for optimizing the energy efficiency of buildings. One of the most important in Europe is EN 15232: Energy Performance of Buildings – Impact of Building Automation, Controls and Building Management.

It shows the potential that lies in room automation. With SBC, you can exploit this potential: energy efficiency class A with full connectivity.

SBC's room automation is

- ▶ freely programmable,
- ▶ customisable,
- ▶ smart and sustainable.

Putting trust in SBC saves money for all time

80% of the costs of buildings are incurred during the operating phase. 50% of them are pure energy costs that can be reduced with smart building automation.

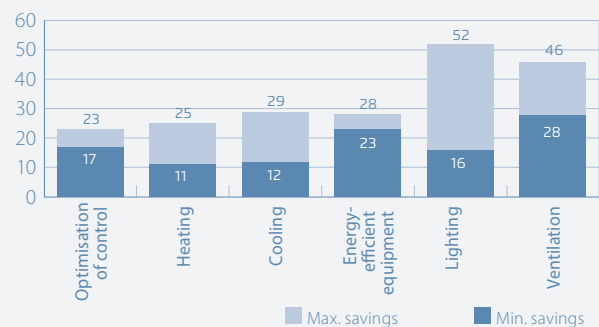
Everyone benefits from that:

- ▶ Investors and owners save operating costs throughout the life cycle. This is because they get a flexible solution which can be expanded according to requirements.
- ▶ Planners and architects get easy-to-implement solutions from a single source, thus reducing the effort and expense of their planning and implementation activities. This already begins with building information modelling (BIM) and the texts for requests to tender.
- ▶ In SBC, system integrators have a strong partner with a comprehensive range of products. These products can be programmed and extended flexibly to meet requirements.
- ▶ Users of buildings benefit from the comfort delivered by automation. Often, they can run intuitive apps from a smartphone or tablet – because our focus is on users.

Dynamic setpoints in hotel rooms by way of example

Energy consumption in hotel rooms can be optimised by linking the various facilities. Depending on the situation, setpoints for temperature, lighting and blinds can be adjusted dynamically to the required energy level in line with user requirements via a hotel management system.

Energy saving potential in per cent

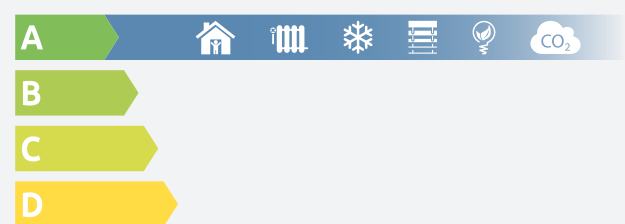


Studies* prove that great energy potential lies in room automation. With SBC, you can exploit it.

* See Prof. Martin Becker and Peter Knoll: Energy-Efficient Buildings through Room, System and Façade Automation, Biberach University of Applied Sciences, Faculty of Architecture & Building Climatisation, 2012 Automation Meeting in Böblingen, trend session: Securing the Future with automation

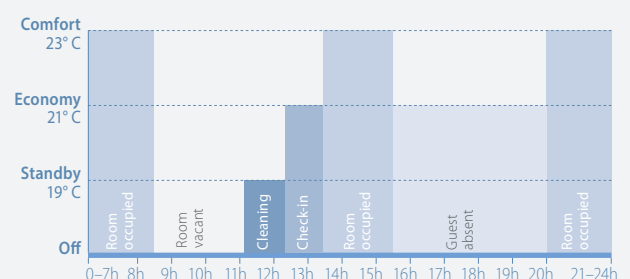
Energy efficiency with room automation

The EN 15232 standard describes the impact of building and room automation on the energy efficiency of buildings. It defines four energy efficiency classes:



- A** Highly energy-efficient room automation with networked facilities
- B** Advanced solutions optimised for each facility, partially networked
- C** Standard room automation, frame of reference
- D** No room automation, not energy-efficient

Hotel room setpoint profile



Fostering health and wellbeing

SBC room automation puts the focus on people.

We spend most of our time in rooms – sleeping, eating, working and relaxing. This is why it is essential to have a pleasant room climate. For our wellbeing, our ability to perform and our health. With SBC room automation, you are optimally prepared because it focuses on the people who use rooms.



Comfort is a matter of attitude

Wellbeing begins with climatic surroundings. So does room automation. But with SBC it goes much further. When it comes to heating or cooling rooms, even our low-end models provide good, simple solutions for communicative control of room temperature. SBC's controllers and operator control units create ideal conditions for flexible programmability and communication extending far beyond typical automation of heating, ventilation and air conditioning (HVAC) – including for more complex requirements.

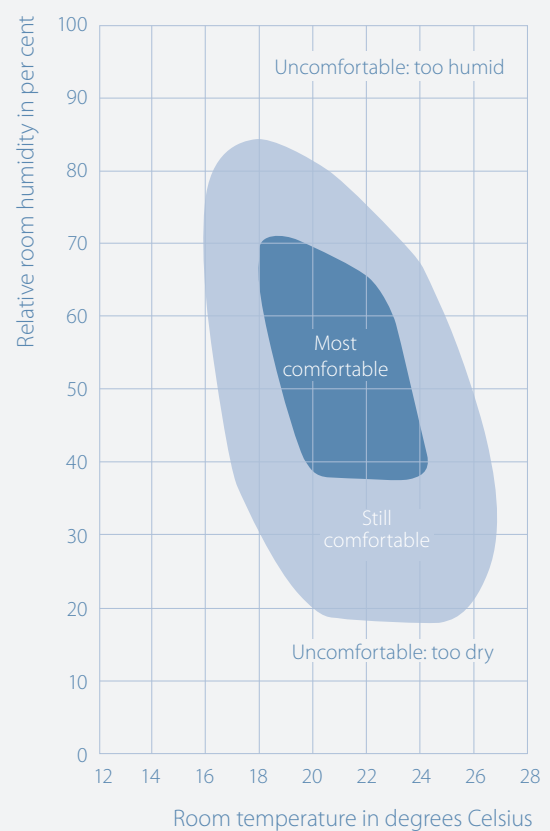
The perfect working climate needs both light and shade

HVAC systems ensure that the temperature is right but, for a climate that really meets people's needs, the environment and weather ought to be included as well, for example heating the building through sunshine. SBC's requirements-oriented room automation accordingly provides the appropriate shade in line with the position of the sun. If the incidence of light is too strong, the blinds will close and the available solar energy is used to optimise the temperature of the building instead of drawing upon mechanically generated heating and cooling energy.

Pleasant 23° C for maximum productivity

If it is too warm, our ability to perform decreases. The same applies when it is too cold. For people wearing summer clothing in a sedentary office job, the optimal room temperature is a pleasant 23° C. They really do give their best at this temperature. With SBC room automation, you bring summer into the office and maximise effectiveness, taking all factors into account such as sunshine, climatisation and possible overheating from extensive IT and office equipment.

Comfort zone

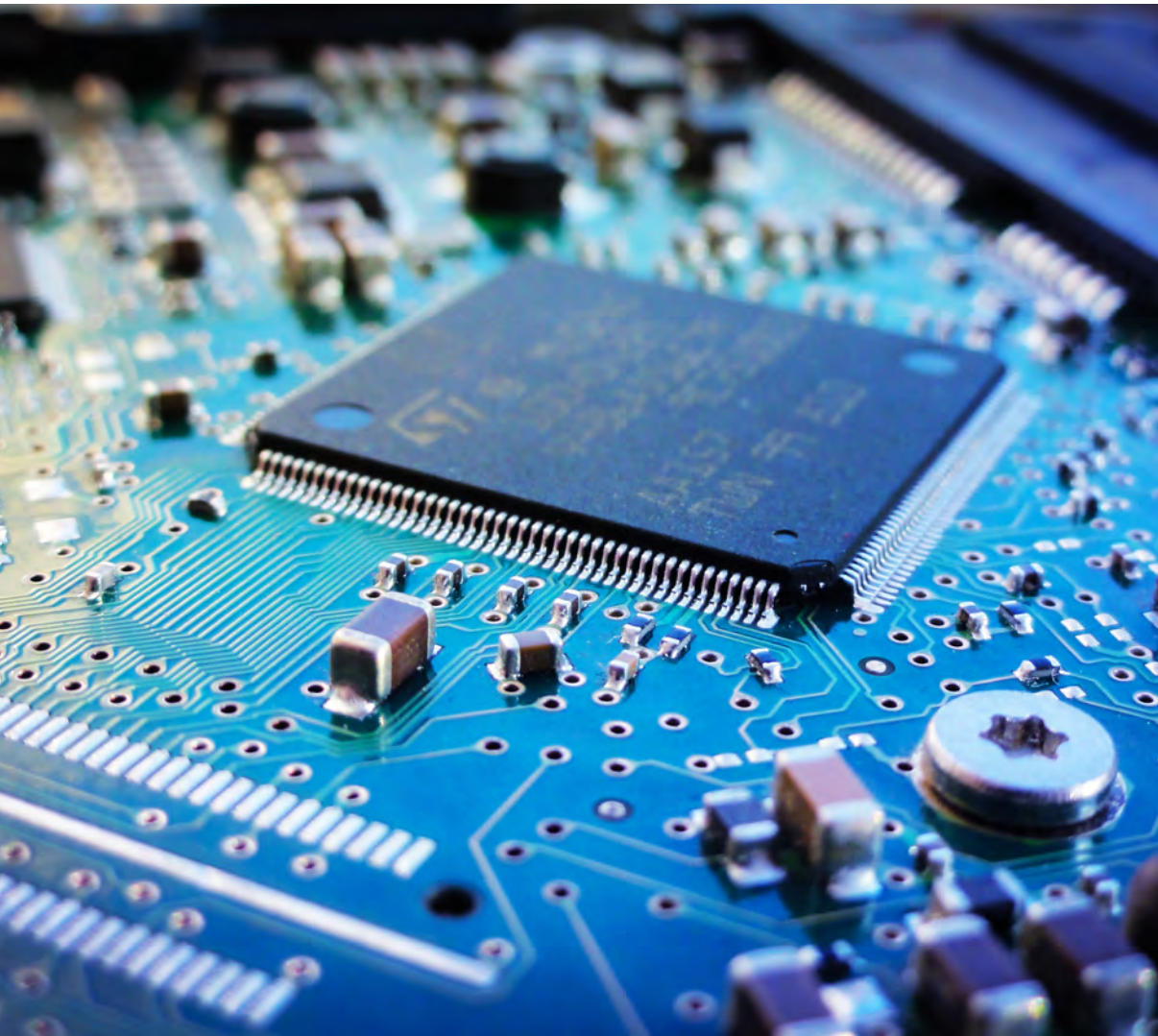


Requirements-oriented room automation puts the focus on people. It takes into account when rooms are being used and delivers maximum comfort in terms of heating, cooling, fresh air, light and shade. Energy consumption is as high as necessary and as low as possible.

It all comes down to connectivity

Communication at all levels

From the primary system and local applications to operating – SBC room automation connects the applications of all facilities involved. No matter what it involves – heating, ventilation and cooling and/or lighting and shading. Communication via BACnet, LON, Modbus, S-Bus and other protocols can be organised flexibly, enabling all energy and operating costs to be optimised. This pays off for owners and users alike.



 **BACnet**

Modbus

LONWORKS®
Networks

Profibus

M-Bus

DALI

KNX


enocean®

MP-BUS®
MP-BUS COMPATIBLE

Controllers and operator control units for all cases – from SBC

The use of rooms is as individual as people themselves. This increases the requirements placed on room automation. With SBC, you can meet these requirements. At every level. For every conceivable extent of automation. We offer a wide range of controllers and operator control units. Each of our room control devices has an interface for smart networking – ideal for attaining the high energy efficiency goals set out in EN 15232.

Power supply

24 VDC power supply units for electrical sub-distributors of all sizes. Attuned to the power requirements of room automation, they are the ideal supplement to the power supply of E-Line automation devices and connected peripherals.

- ▶ 230 VAC / 24 VDC
- ▶ Power 0.9 A (Q.PS-PEL-2401)
- ▶ Power 2.8 A (Q.PS.PEL-2403)
- ▶ Ideal for E-Line products
- ▶ Push-in terminals with wire end ferrules, no tools required



Application areas

Room automation plays a key role when it comes to energy-efficient building automation. But room automation only becomes indispensable and cuts operating costs when all affected areas (heating, ventilation, air conditioning, lighting, shading and the coordinating floor management functions) interact meaningfully.

- ▶ Administrative, office and production buildings
- ▶ Clinics and hospitals
- ▶ Sports halls and swimming baths
- ▶ Universities, schools and nursery schools
- ▶ Hotels and liners

Manual control

SBC has a wide range of operator control units for all room automation applications.

- ▶ PCD7.L6xx operator control units for combinable room control systems
- ▶ Room panels with integrated logic control for controlling room functions



Local

Like all SBC products, our room automation controllers are characterised by their robustness, expandability and networking capabilities.

- ▶ Freely programmable PCD1 E-Line (PCD1.Xxxx-C15) for controlling zones across rooms with regard to all facilities
- ▶ Configurable BACnet room control system PCD7.LRxx for rapid commissioning and energy-efficient operation
- ▶ Compact room controller PCD7.L79xN for controlling the temperature in smaller rooms



Primary

SBC offers proven automation products for controlling and operating primary systems in buildings.

- ▶ Saia PCD controllers for modular system automation with up to 13 communication interfaces; ideal for simultaneous communication via BACnet and LON
- ▶ Web Panels MB and pWeb Panels MB allow flexible and intuitive touch-screen operation of the entire building automation set-up.



Clear arguments for DALI

The right light at the right place and right time

It's nice when the lighting is just as we want it; when artificial light is mixed perfectly with daylight and rooms are lit homogeneously at all times of the day. DALI makes this possible – integrated and controlled via SBC room automation. This pays off because requirements-driven lighting can reduce energy consumption by up to 80% in some cases.



Fully networked or centrally controlled – both are possible.

Up to 64 DALI lights can be connected to a controller. DALI is more suitable for highly complex lighting control than any other system. There are different ways of installing it: via a central controller for each section or via a CPU floor controller, or by integrating it in an automation set-up that is completely networked via Web+IT and operates across facilities. With SBC, both approaches can be taken.

For the optimal mix of artificial light and daylight

Optimal lighting conditions are needed in office buildings to help people work efficiently. Using SBC's DALI module, lighting can be automated across floors. Natural sunlight is mixed with artificial light to form harmonious, daylight-like lighting according to the time of day and season or whether blinds are open or closed. This gives all employees the same lighting conditions no matter whether they are working at a desk near a window or in the interior.

DALI room automation for the modernised ward block at Triemli Hospital in Zurich

Exactly 454 SBC room boxes featuring a PCD1.M2110R1 and integrated DALI master connection (PCD2.F2610) control about 1,500 sickrooms (including the entire lighting) in the 17-floor ward block at Triemli Hospital in Zurich. About 8,000 lamps, which are tailored to the functionality of the various sections of the building, are connected to these boxes and are dimmed automatically when the sun provides enough light. All in all, the management system monitors over 13,000 DALI devices, like lamps, presence sensors and brightness sensors, delivering optimal light for modern healthcare: daylight combined with energy-optimised artificial light.

Configuration options

Floor management

Q.PS-PEL-2401 power supply unit

PCD7.D443WTPR Room control

Ethernet

PCD1.M2220-C15 E-Line CPU

Functions

Lighting

- ▶ Freely programmable
- ▶ Autonomous functioning
- ▶ Network connection

PCD1.F2611-C15 E-Line DALI module

Interfaces

RS-485 network

RS-485 application

DALI

Inputs

Switch

Access card

Wireless application:

Wireless:

On/off

Dimming

EnOcean

Application example

Energy investment oriented to the user profile

Time (h)	Hotel Room Use	Office Room Use
0h	0.0	0.0
2h	0.0	0.0
4h	0.0	0.0
6h	0.5	0.0
8h	1.0	0.0
10h	1.0	0.0
12h	0.7	0.0
14h	0.7	0.0
16h	0.85	0.0
18h	0.4	0.0
20h	0.5	0.0
22h	0.7	0.0
24h	0.85	0.0

Offices are mainly used during the day whereas hotels are mostly used in the early morning and in the evening. Cross-floor room automation makes it possible to exploit all energy saving potential on the basis of an accurate use profile that depends on requirements and the presence of people.

Completely oriented to guests

Smart room automation for hotels and liners

Can a hotel room meet the wishes of guests? Thanks to SBC, it can do so automatically. Integrated in the hotel management system, our products control the temperature precisely when the room is ready for occupancy and reduces it when the room is vacated. By incorporating configuration options to make good use of energy, control can be extended to a neighbouring facility and/or to a higher-level floor management system. The outcome is maximum comfort for guests coupled with optimal energy efficiency for the hotel.



Networking to maximise comfort

Room automation increases comfort, creates a unique atmosphere at the touch of a button and adjusts to the moods and needs of its users. Communication is the key to this all-round service. Here, SBC controllers with their integrated Web+IT functions provide extensive networking options. Maximum flexibility for solutions via BACnet, LON, Modbus, S-Bus, EnOcean or DALI.

Recognition that keeps people happy

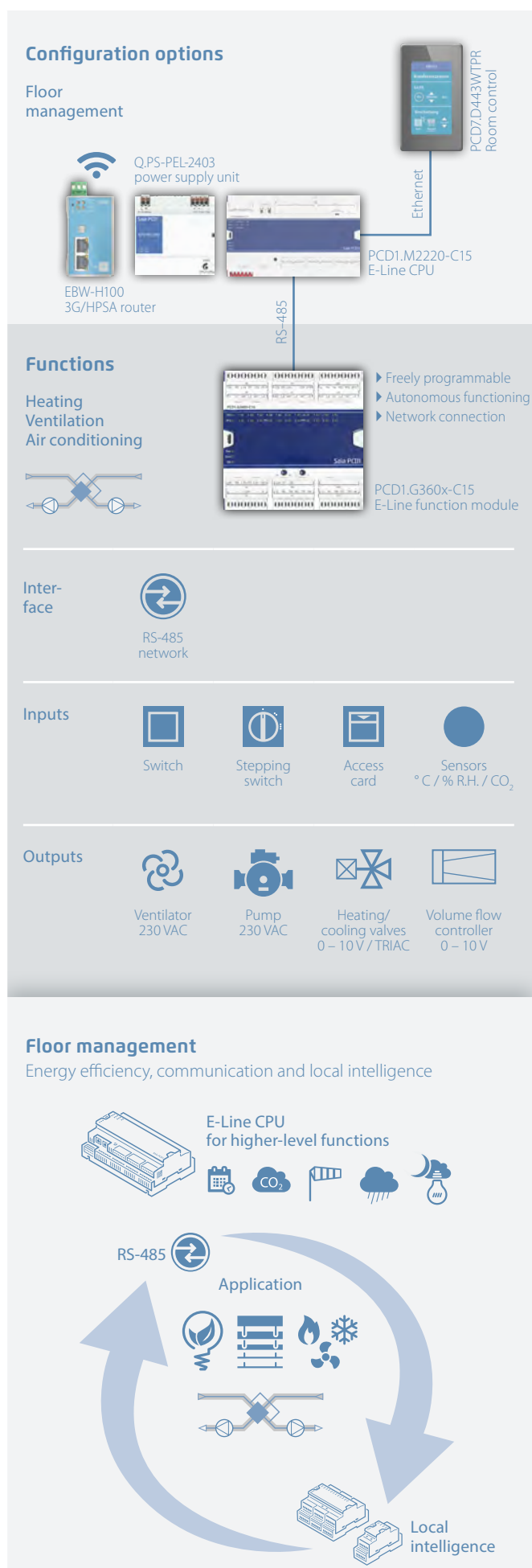
An SBC room automation solution ensures that hotel rooms recognise when guests arrive, what room temperature they want, when they leave and when cleaning is required. Lighting, shading, music and TV can be controlled via an app or tablet.

Hospitable room automation for CitizenM hotels

The CitizenM hotel chain is based on this innovative service concept: All rooms are equipped with a tablet that guests can use to control a variety of things, ranging from room temperature, blinds and lighting to television. This is made possible by a ready-made SBC room box featuring a Saia PCD controller connected via IT to the Swisscom hospitality server. The settings made by guests are stored and retrieved the next time they check in. This means guests always feel at home regardless of whether they are in London, Glasgow, New York or another city as long as they choose a CitizenM hotel.

Innovative feel-good factor for guests

- ▶ Intuitive control via tablet or smartphone app
- ▶ Selectable room scenarios (relax, business, etc.)
- ▶ Wake-up calls
- ▶ Room pre-setting (lighting, air conditioning etc.) prior to check-in according to the guest's personal preferences



Excellent for the work climate

Cross-facility room and zone automation

Where many people work together, augmented requirements are placed on fire protection and health and safety. Cross-facility room automation of office buildings with their meeting rooms, individual offices and open-plan offices must satisfy these requirements. It has to ensure appropriate ventilation and air conditioning of the rooms to provide an agreeable working climate. But above all it provides a good climate in every-day working life. And everyone benefits from this.



Modular room automation with E-Line

With E-Line, you will achieve your energy efficiency goals according to EN 15232. This product family consists of modules for applications in the fields of heating, ventilation and air conditioning (HVAC), lighting solutions with DALI 2 as well as conventional lighting and shading technology. All modules feature a network interface to exchange central, higher-level operating data. Ideal for offices and everyone working in them.

1,000 controllers for the Rive Centre in Geneva

The retrofitting of controllers in about 1,000 office units at the Rive Centre in Geneva is a convincing example of energy-efficient room automation. This solution was implemented with SBC controllers for HVAC and blinds on the basis of the programmable PCD1.G3600-C15 E-Line and analogue room control units.

SBC room automation is ideal for:

- ▶ Energy-efficient control
- ▶ Communicative automation
- ▶ Connection of facilities
- ▶ Hardware and software expansion
- ▶ Certainty of investment



A strong connection



We have been part of the Honeywell Group since 2013 and operate autonomously in the area of Home and Building Control Technologies (HBT). A strong connection with synergies that also benefit our customers and their customers around the world. Financially, because with this partner at our side, we can supply major projects anywhere at any time. Logistically, with our global presence and our complementary product lines. For example, not only do we supply the control technology, but also the field devices.



Synergies from which you benefit

Our cooperation with PEHA is an example. Like SBC, this company from the Sauerland region of Germany belongs to the Honeywell Group. PEHA's operator control units are easy to install and use, and complement SBC's Saia PCD controllers perfectly. The operator control units are ideal for room automation applications via EnOcean or PEHA-PHC connection (RS-485) in combination with the freely programmable PCD1 E-Line products, for example.

Flexibility is a hallmark of our cooperation

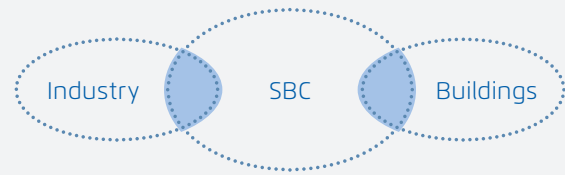
Our cooperation is shaped by competence, professional processes and loyalty you can rely on. We see ourselves as a partner for our customers – system integrators and OEMs alike. We supply the products, components and systems, you take care of the planning, engineering and implementation. No competition, perfect interaction, greater success for all planners, operators and users involved.

Modularity is part of our product philosophy

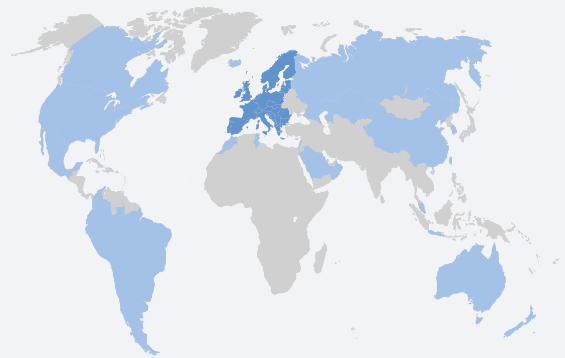
Saia PCD technology is open for all common standards for communications, control technology and automation of all infrastructures. Behind this is a modular product philosophy that secures the long-term use of our products, and hence the functionality and profitability of your automation, by guaranteeing compatibility and portability.

Sustainability is one of our brand values

We view sustainability in a holistic way, as both economic and environmental. Saia PCD technology forms the basis for customisable solutions featuring both maximum energy efficiency and maximum profitability. And this in turn forms the basis for our long-term customer relationships and our success in tapping international markets.



Saia Burgess Controls is characterised by openness – in technology, in cooperation with our customers and in the development of international perspectives. We are clearly positioned in the field of infrastructure automation. And that's unique in the market because we combine conventional building/room automation with the benefits of industrial automation in modularity and flexibility.



The head office of Saia Burgess Controls is in Murten, Switzerland, from where it supplies its European and international core markets. And we are part of a strong alliance, under the umbrella of the Honeywell Group.

Saia Burgess Controls in figures

- ▶ € 65 million annual sales
- ▶ 250 employees
- ▶ 2 million I/O points per year
- ▶ 35,000 CPUs per year

Everything from a single source. Everything under control:

- ▶ Product development
- ▶ Production
- ▶ Assembly
- ▶ Logistics
- ▶ Training and support

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