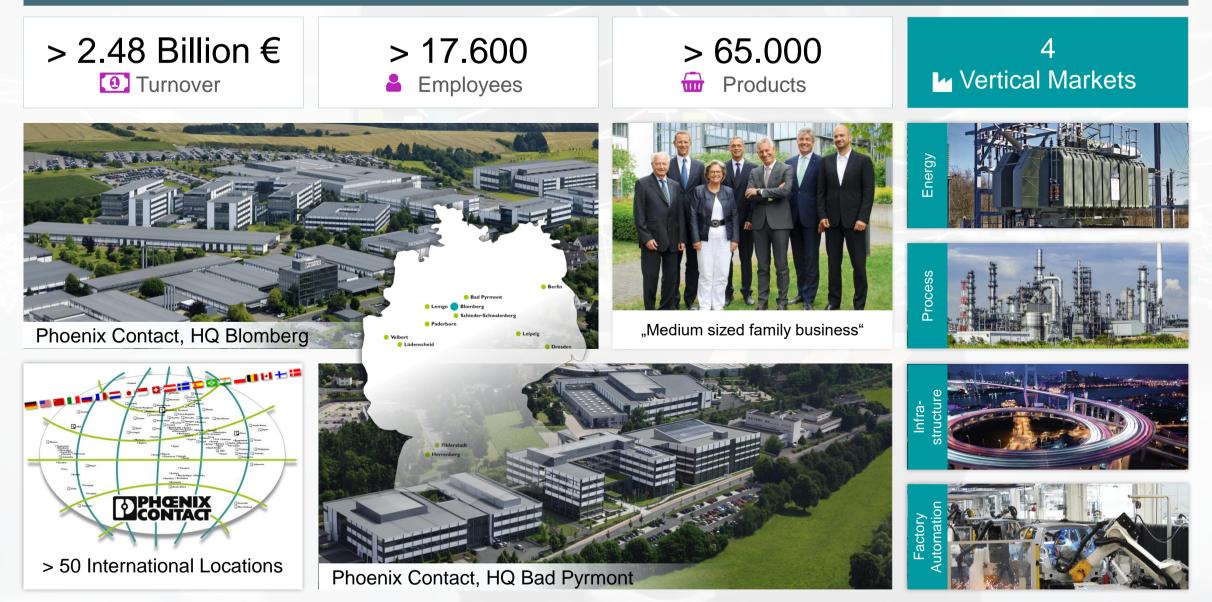


Dr. Virginijus Valevičius / Business Area Manager / Industry Management and Automation PHOENIX CONTACT UAB / 2020.10.27



Phoenix Contact GmbH & Co. KG

PHŒNIX CONTACT



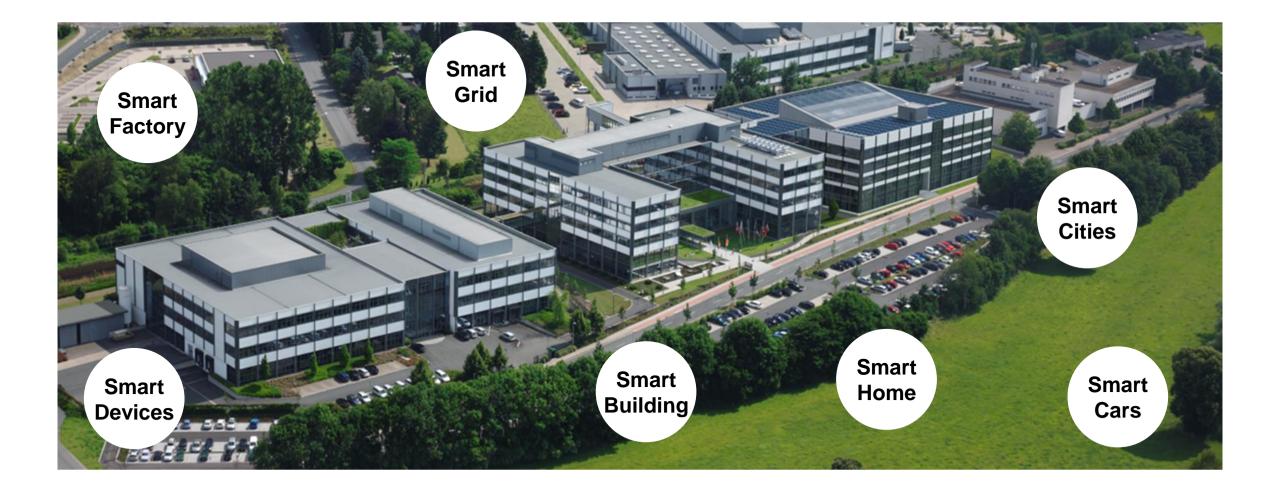
With > 65,000 products, we will find your solution together

Innovative and broad product and solution portfolio





Our world is becoming "smart". We are surrounded by smart technology and services



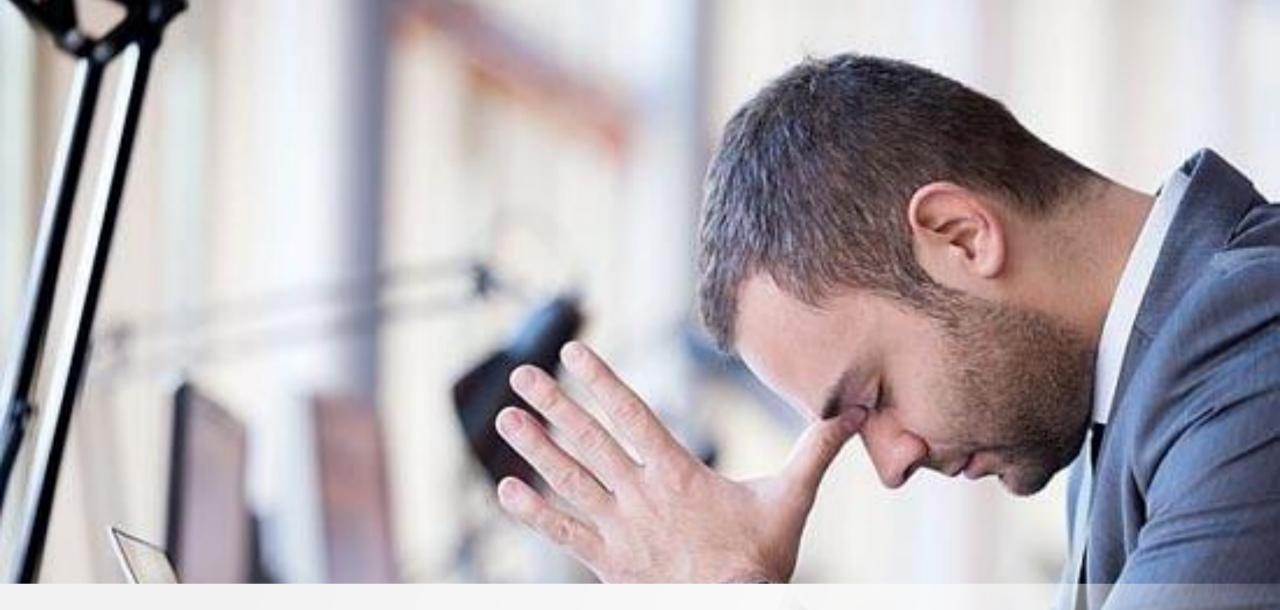


Digitization in facility management

Networked trades - Building IoT in practice







" The building market uses the structures of "YESTERDAY" with the methods of "TODAY" to solve the challenges of "TOMORROW" "

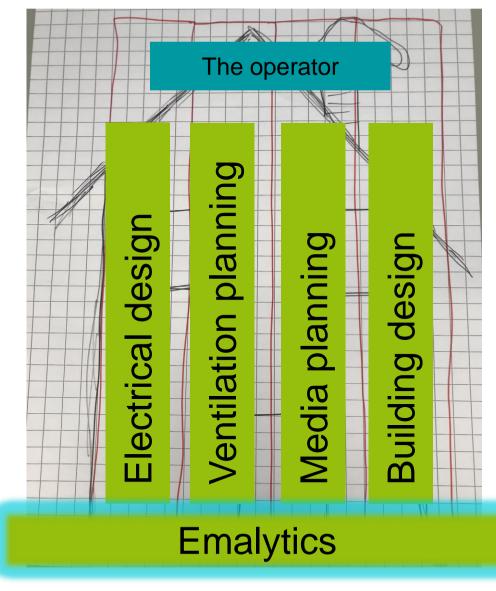
How are (still) buildings built and where is the opportunity

The organization:

Some specialist planners only see your work in the building and only optimize it!

The operation:

Many contacts. Little communication of people and little communication of technology.



The technology:

Each building in the building often speaks a different language.

The future:

Technologies such as AR glasses or indoor navigation offer the operator new opportunities. Basic requirement: a networked building.



State of the art technologies move into the building

New IoT technologies offer great potential

Indoor navigation

Co-Working-Areas

Robot cleaning service

Pay per Use-Services

Voice-Control

Die Herausforderungen und der Nutzen von Building IoT 01.10.209

Predictive optimization

AR technologies

AI systems

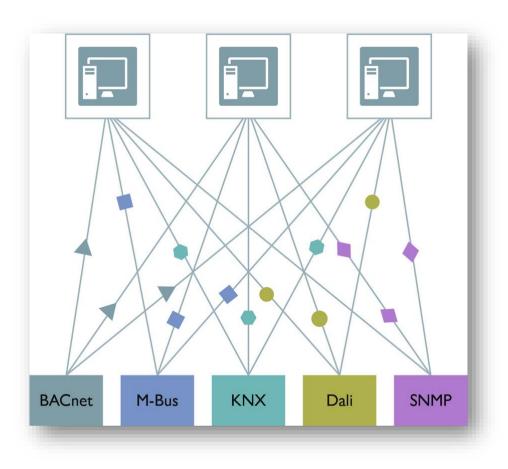
Cloud-Services

Smart-Cities-Integration

Cyber-Security

Digitization in building management

Standardization of communication via software

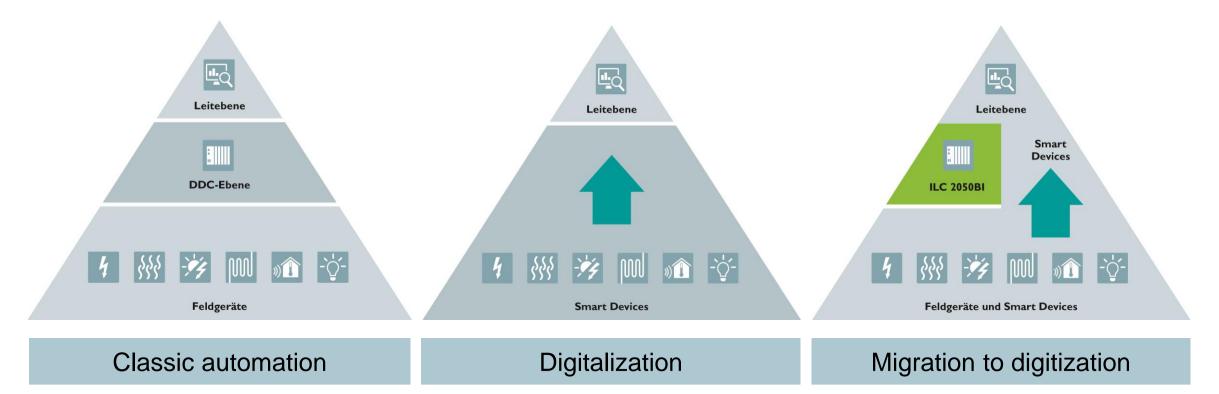


Daten-Normalisierung [...] BACnet KNX **SNMP** M-Bus Dali

INSPIRING INNOVATIONS

Building automation

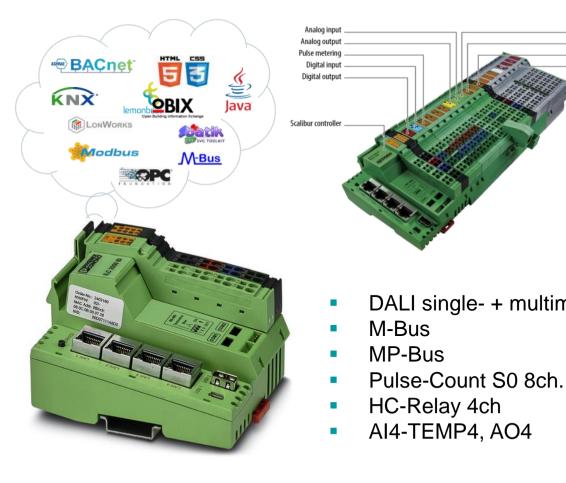
Break through the communication levels





Control technology

Building IoT-Controller







The Phoenix Contact Industry Solution Center in Bad Pyrmont. One of the most digital buildings in Europe ...



Example – Advantages in building automation **Start to use your data today**



Phoenix Contact, Bad Pyrmont, Germany



Example – Advantages in building automation Facility as a cyber-physical system

Building types

Production, development and office building

Maintenance management Predictive operation via learning algorithms

Plant monitoring

Heating, ventilation, air conditioning, space



Safety Security access controls video surveillance **Domestic production** CHPs, heat pumps, photovoltaics

Energy optimization Load and storage management heat-cooling ring

E-Mobility Charging infrastructure incl. interface to billing systems

One building management system for all applications



Example – Advantages in building automation **New building with building IoT**

- office building
- 18,000 m² usable space
- 5 floors & atrium
- approx. 600 employees
- 160 KWp photovoltaic plant
- 2 CHP units
- E-Mobility charging stations





Example – Advantages in building automation Advantages in building operation

- Optimization of operating costs, one system for all applications
- Active workplace co-design creates creative, motivating working environment
- Optimized energy purchasing thanks to combined production planning and energy supply for buildings
- Sustainable know-how development in facility management thanks to integrated system landscape





Example – Advantages in building automation **Automation technology**

- 39 Controls
- approx. 200 I/O modules
- approx. 30,000 data points
- Standardized Protocols

BACnet, Modbus TCP/RTU, LonMark, Mbus, ZigBee, EIB, EnOcean,, MP-Bus, Profibus, DALI, Z-Wave, KNX





Embracing the Megatrends of the Fourth Industrial Revolution **Augmented reality**

Augmented reality guides external building maintenance technicians, supports quality inspection of tools, configuration of tools and troubleshooting.

Reduce time and errors related to tool configuration and quality inspection Information about real-time data Avoid need to accompany and instruct external person





The intelligent production of tomorrow and todays benefit Using data for AR and navigation





Example – Advantages in building automation **Technical advantages**

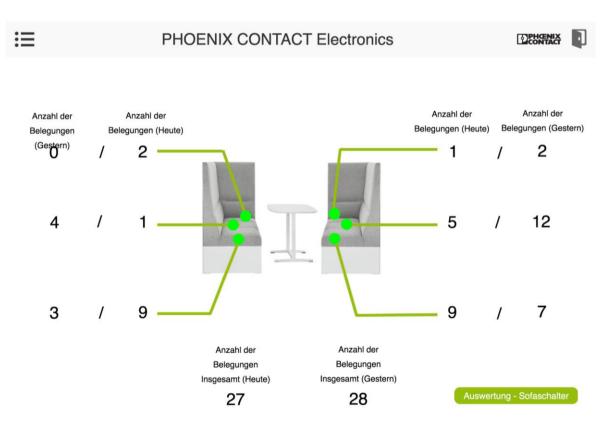
- Efficient commissioning by creating the data points once as an information object
- Minimized engineering effort through integration of IP communication and classic systems
- Simple connection of existing systems through standardization of classic protocols
- Demand-driven personnel deployment thanks to bidirectional communication
- Preventive maintenance due to high information content and data transparency





Smart sofa

Benefit from data

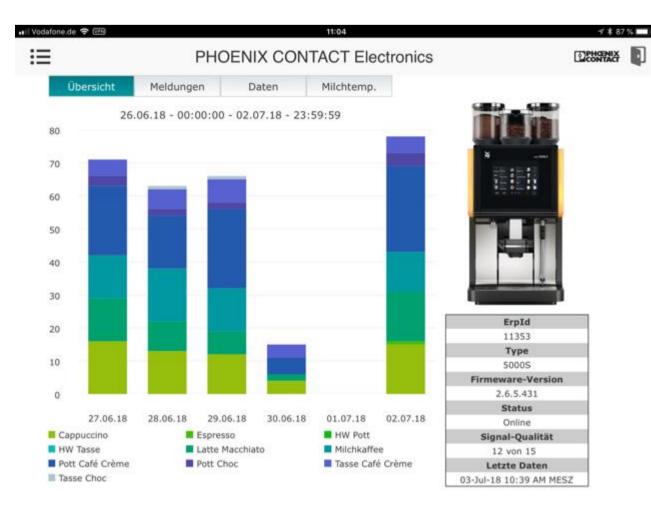






The networked coffee machine

Use from data

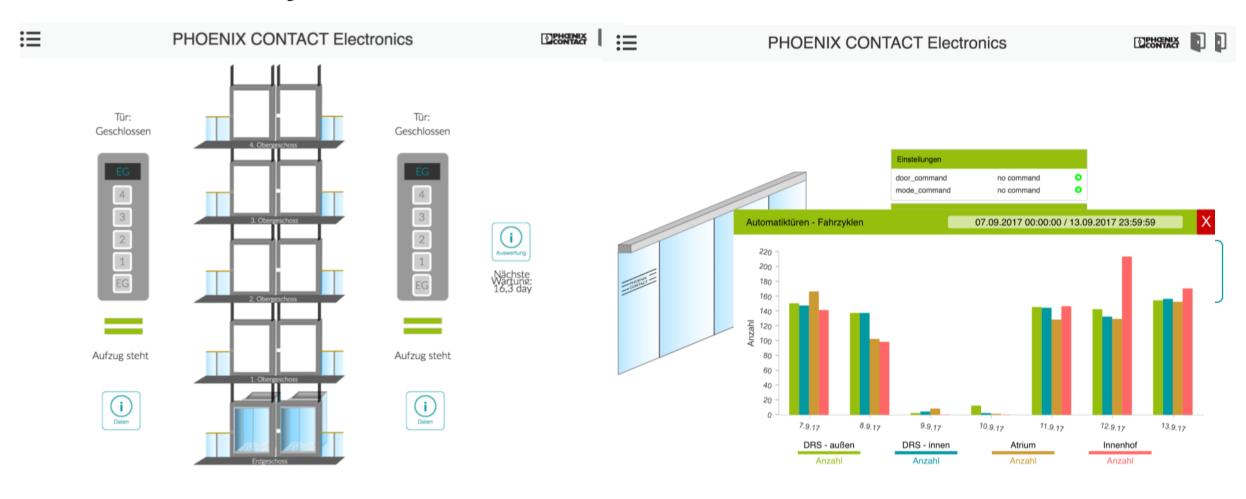


🔐 Vodafone de 🗢 🖽 - × 87 % 11-05 := PHOENIX CONTACT Electronics Übersicht Meldungen Milchtemp. Gesamthrühzeiter Anzahl der Dosierungen Brüher 1: 5357 Heißwasser¹ 0 Milch: 4414 Dampf: 4414 Pulver (Schoko): 285 Pulver (Topping): 0 Brühzvklen seit Portioniere Pflegekit: 5357 Mahlscheibe 1: 1993 Mühle 1: 1993 Servicewartung 1: 5357 Servicewartung 2: 5357 Mahlscheibe 2: 3392 Antriebswechsel Brühermotor: 5357 Mühle 2: 3302 Revision: 0 Mixerzyklen: 285 Brühertausche 1: 5357 Betrieb und Pflege Servicetermine Letzter Service: null Betriebsstunden: 28 Zulauf Boiler [Liter]: 845 Pflegekit: 19-Mar-19 11:14 AM MEZ Zulauf Dampfkessel [Liter]: 26 Servicewartung 1: pull Boilerwasser seit Entkalkung [Liter]: 1219 Servicewartung 2: 19-Mar-20 11:15 AM MEZ Dampfkesselwasser seit Entkalkung [Liter]: 0 Revision: null Durchgeführte Reinigungen: 19 Durchzuführende Reinigungen: 28 Reinigungen Mixer: 19 Reinigungen Milch: 19 Entkalkungen: 0 Letzte Entkalkung: null Verkalkungszähler DLE: 0 Wasser seit Filtertausch: 0 Restreichweite Filtertausch: 1 * * 87 % := PHOENIX CONTACT Electronics Übersicht Meldungen Daten 19.06.18 - 00:00:00 - 25.06.18 - 23:59:59 3 2 1 19.06.18 20.06.18 21.06.18 22.06.18 23.06.18 24.06.18 25.06.18 26.06.18



Passenger and freight elevator management

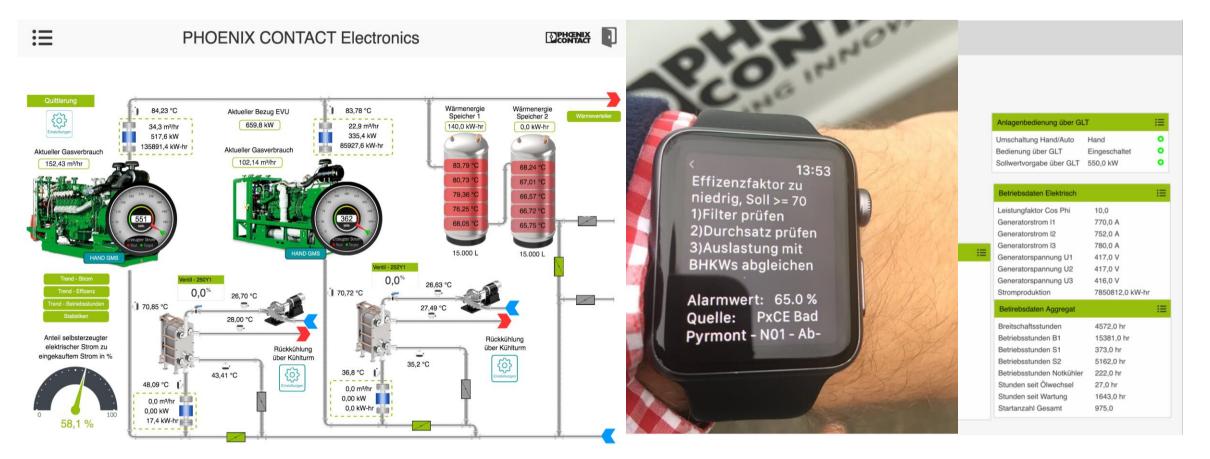
Maintenance cycle after use



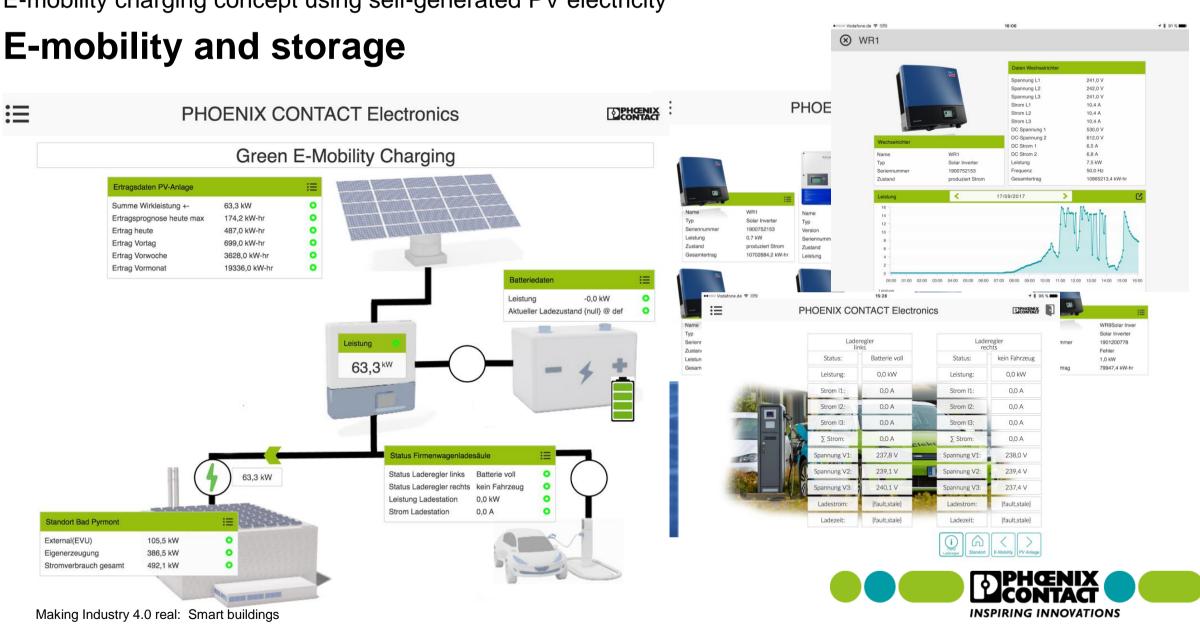


Air conditioning, heating, ventilation as required

Maintenance tailored to your needs







E-mobility charging concept using self-generated PV electricity

E-mobility and storage

Room automation

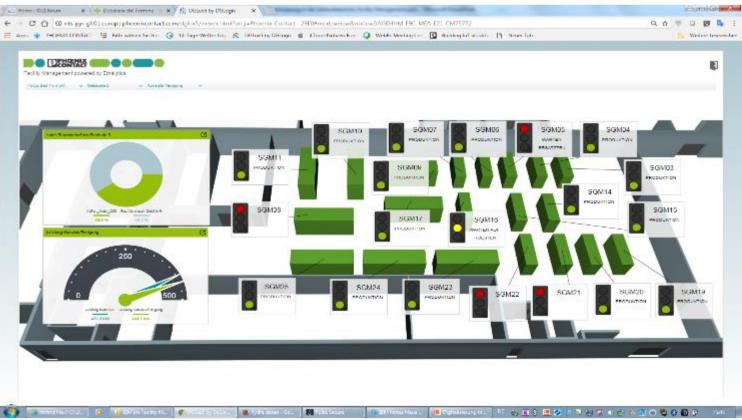
Individual room control based on demand

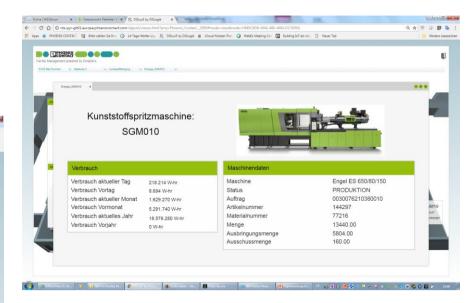
Projektor		Jalousien		Gesamtstromverbrauch - Schulungsraum
Power-Status Eingangstemperatur Ausgangstemperatur	Standby 27,0 °C 27,0 °C 696,0 hr 701,0 hr 3304,0 hr	Aktuelle Höhe Aktueller Kippwinkel	0,00 % 0,00 %	120 - 100 -
Laufzeit Lampe Laufzeit Projektor Austausch Lampe		Fluchttür Position	geschlossen	80 - 60 - 40 - 20 - 0 0:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 Akuteller Stromverbrauch:53,4 W
Status	No errors	Raumklima Temperatur Zustand Heiz-/Kühldecken	22,4 °C kühlen	
Betreff Startzeit Endzeit	Teamrunde Automotive 18-Sep-17 10:00 AM MESZ 18-Sep-17 12:00 PM MESZ	Beleuchtung	Kunien	
Raumauslastung		Licht - Gesamt Licht - Front	0,0 % 0,0 %	
Auslastung Gestern Aktuelle Belegung	80,0 % Frei	Korrekturfaktor Helligkeit - Gesamt Korrekturfaktor Helligkeit - Front	0,0 % 0,0 %	< 18/09/2017 >



The networking of the building with the production

Use from data

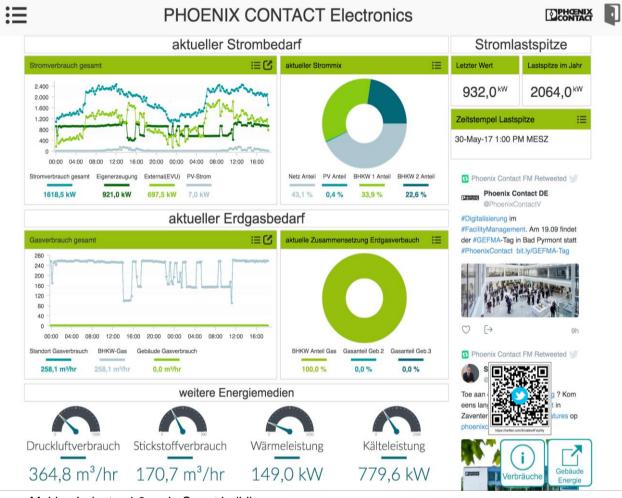


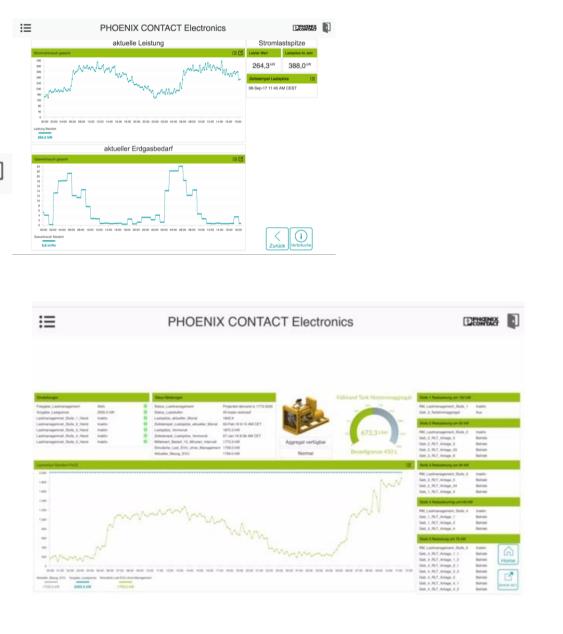




Bad Pyrmont location

Overview of energy consumption





Benchmark building management Phoenix Contact Bad Pyrmont

Annual savings in operation thanks to Building IoT





Welcome to the future of smart building technology

Building IoT Solution Center in Bad Pyrmont...



Thank you for your attention and....

...let us seize the opportunities!

Making Industry 4.0 real: Smart buildings

Let's shape the future together!

