

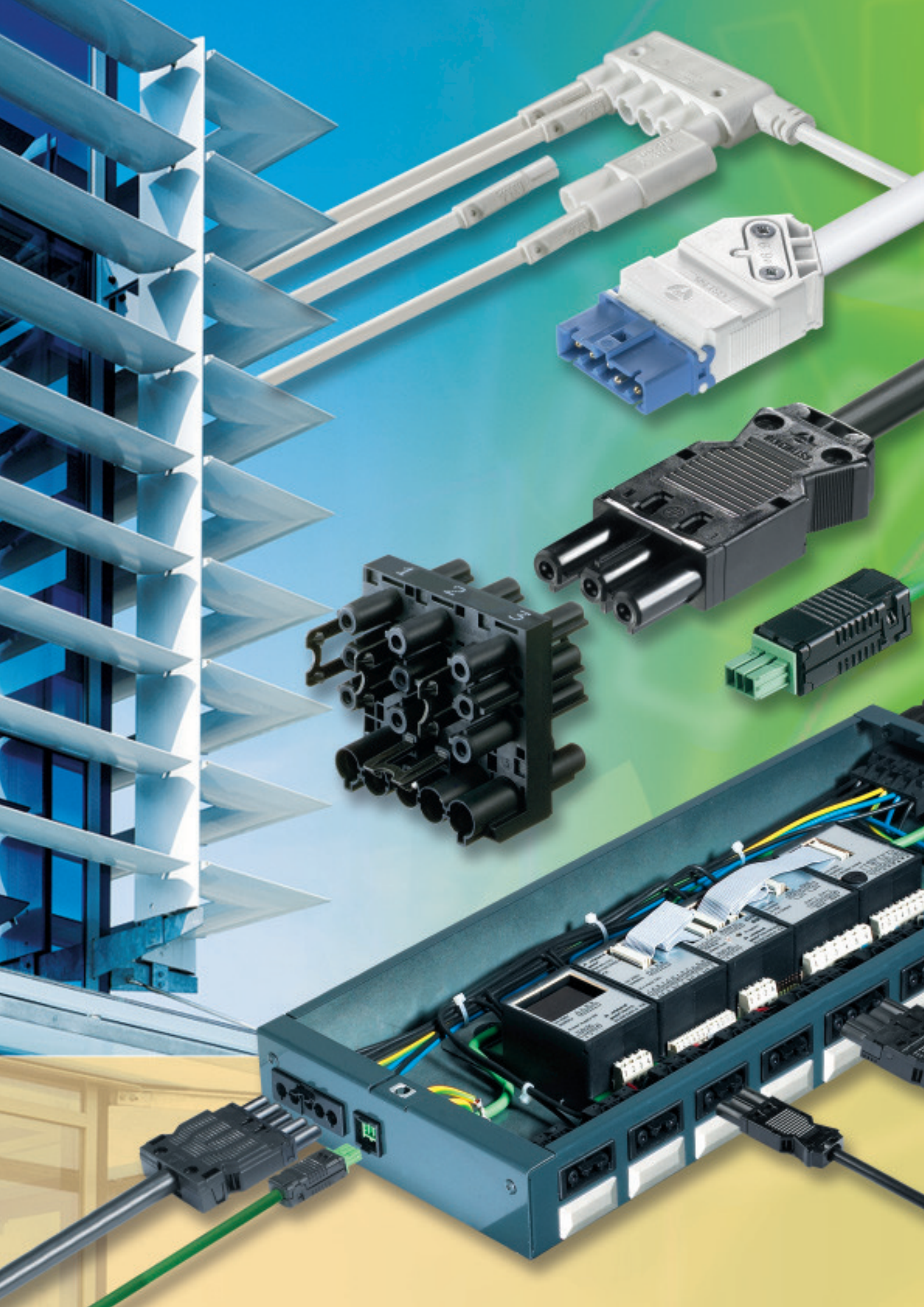


smart Installation

Pluggable, decentralized
electrical installation
for sustainable building

Building a green future





smart Installation with Wieland. Table of contents.

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Green buildings in electrical installation.

smart Installation concept.

The EPBD (Energy Performance of Buildings Directive) is restricted only to the energetic aspects of a building, which reflect in the mandatory energy pass, for example. Investors and users, however, place more and more focus on holistic sustainability. Basic ecological, economical and functional data, which are not depicted in the EPBD, are also used for the evaluation.

These criteria are generally hard to evaluate by the investor or tenant. Within the last years, improvements have been made in this respect, due to the development of various certification systems, which evaluate the sustainability of a building for a comparison. Two systems have currently established themselves on the German/European market. On the one hand, the LEED (Leadership in Energy and Environmental Design) by the USGBC (U.S. Green Building Council) originally from the US and, on the other hand, the DGNB (German Sustainable Building Certificate).

Even if the main focus of both systems are different, *smart* installation concepts with **gesis** help improve the sustainability of a building in many areas. Regardless of whether aiming at increasing energy efficiency or flexibility of use, Whether focusing on supply or decentralized automation of the user. **gesis** supports you in achieving your certification target.

Certification procedure?

Green building certification is voluntary, as opposed to meeting the EPBD and issuing the energy pass. The project will be certified by the respective organization. Generally, construction and renovation projects are already accompanied by the organization, which ensures, that the targeted certification level is reached. The actual certification is then performed via point systems using checklists.

Pluggable, decentralized power supply with **gesis**[®]

The *smart* Installation concept with consistent three-phase power supply as close to the consumer as possible, not only saves copper, but the voltage drop is also reduced. This favors the evaluation criteria EA-1 (optimizing the energy efficiency) for LEED certification as well as points 16 (building-related costs in the life cycle) and 17 (stability of value) for DGNB certifications.

Furthermore, the pluggable and reusable version of the installation has positive effects. The assessment regarding reuse of building materials (5%/10%, MR-3.1/MR-3.2) from the LEED check lists can be improved. Clearer still are the advantages in the case of a DGNB certification, where not only the assessments from the areas socio-cultural and functional quality (point 28) or technical quality (point 42) are improved;



DGNB certificate



LEED certificate
Platinum



LEED certificate
Gold



due to the industrial pre-fabrication of large parts of the electrical installation, the process quality and the quality assurance of the building construction (point 50) are optimized.

Finally, the planning process accompanying the smart Installation concepts has a positive impact on the overall evaluation. On the one hand, credits for the LEED system can be scored for innovative planning (ID 1.1-1.5) which is not possible with a conventional electrical installation from a central main-distribution. On the other hand, points 43-45 (process quality / quality of planning, quality of project preparation (43), integral planning (44), optimization and complexity of the planning approach) are improved.

Decentralized building automation with *gesis*[®]

Designing the building automation as smart Installation yields further results favorable for certification. The energy consumption, for example, can be minimized, which is a minimum requirement of the LEED system (point EA-P2). For the DGNB the ecological quality is an intrinsic priority, which can be improved in points 1-5 (effect on global and local environment) due to the lower primary energy consumption when using *gesis* ELECTRONIC.

LEED Checklist

Sustainable Sites	26
SS-1 Construction Activity Pollution Prevention	8
SS-2 Site Selection	1
SS-3 Development Density and Community Connectivity	8
SS-4 Brownfield Redevelopment	1
SS-5 Alternative Transportation - Public Transportation Access	6
SS-6 Alternative Transportation - Bicycle Storage and Changing Rooms	1
SS-7 Alternative Transportation - Low-Emitting and Fuel-Efficient Vehicles	3
SS-8 Alternative Transportation - Parking Capacity	2
SS-9 Site Development - Protect or Restore Habitat	1
SS-10 Site Development - Maximize Open Space	1
SS-11 Stormwater Design - Quantity Control	1
SS-12 Stormwater Design - Quality Control	1
SS-13 Heat Island Effect - Non-roof	1
SS-14 Heat Island Effect - Roof	1
SS-15 Light Pollution Reduction	1
Water Efficiency	10
WE-1 Water Use Reduction - 20% Reduction	10
WE-2 Water Efficient Landscaping - Reduce by 50%	2
WE-3 Water Efficient Landscaping - No Potable Water Use in Irrigation	2
WE-4 Innovative Wastewater Technologies	2
WE-5 Water Use Reduction	4
Energy & Atmosphere	35
EA-1 Fundamental Commissioning of Building Energy Systems	8
EA-2 Minimum Energy Performance	8
EA-3 Fundamental Design Management	5
EA-4 Optimize Energy Performance	16
EA-5 On-Site Renewable Energy	7
EA-6 Financial Commissioning	3
EA-7 Greenhouse Gas Emissions and Schedules Management	3
EA-8 Greenhouse Gas Emissions - Construction	2
EA-9 Greenhouse Gas Emissions - Operations	2
EA-10 Greenhouse Gas Emissions - Total	14
EA-11 Greenhouse Gas Emissions - Embodied Carbon	6
EA-12 Greenhouse Gas Emissions - Embodied Carbon	3
EA-13 Greenhouse Gas Emissions - Embodied Carbon	3
EA-14 Greenhouse Gas Emissions - Embodied Carbon	2
EA-15 Greenhouse Gas Emissions - Embodied Carbon	2
EA-16 Greenhouse Gas Emissions - Embodied Carbon	1
EA-17 Greenhouse Gas Emissions - Embodied Carbon	1
EA-18 Greenhouse Gas Emissions - Embodied Carbon	1
EA-19 Greenhouse Gas Emissions - Embodied Carbon	1
EA-20 Greenhouse Gas Emissions - Embodied Carbon	1
EA-21 Greenhouse Gas Emissions - Embodied Carbon	1
EA-22 Greenhouse Gas Emissions - Embodied Carbon	1
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EA-95 Greenhouse Gas Emissions - Embodied Carbon	1
EA-96 Greenhouse Gas Emissions - Embodied Carbon	1
EA-97 Greenhouse Gas Emissions - Embodied Carbon	1
EA-98 Greenhouse Gas Emissions - Embodied Carbon	1
EA-99 Greenhouse Gas Emissions - Embodied Carbon	1
EA-100 Greenhouse Gas Emissions - Embodied Carbon	1

DGNB Checkliste

Haupt-Kriterien-Gruppe	Kriterien-Gruppe	Nr. Kriterium	max. Punkte	Gewichtung
Ökologische Qualität	Ökobilanz	1	10	
		2	10	
		3	10	
		4	10	
		5	10	
		6	10	
		7	10	
		8	10	
		9	10	
		10	10	
Ressourcen-sparung und Abfallvermeidung	Wirkungen auf die globale und lokale Umwelt	11	22,5%	
		12	10	
		13	10	
		14	10	
		15	10	
		16	10	
		17	10	
		18	10	
		19	10	
		20	10	
Gesundheit, Wohlbefinden und Nutzerzufriedenheit	Wohlbefinden	21	10	
		22	10	
		23	10	
		24	10	
		25	10	
		26	10	
		27	10	
		28	10	
		29	10	
		30	10	
Funktionale Qualität	Funktionalität	31	22,50%	
		32	10	
		33	10	
		34	10	
		35	10	
		36	10	
		37	10	
		38	10	
		39	10	
		40	10	
Innere Qualität	Qualität der inneren Auslieferung	41	10	
		42	10	
		43	10	
		44	10	
		45	10	
		46	10	
		47	10	
		48	10	
		49	10	
		50	10	
Prozessqualität	Qualität der Planung	51	10	
		52	10	
		53	10	
		54	10	
		55	10	
		56	10	
		57	10	
		58	10	
		59	10	
		60	10	
Reinigungsqualität	Qualität der Baueinführung	61	10	
		62	10	
		63	10	
		64	10	
		65	10	
		66	10	
		67	10	
		68	10	
		69	10	
		70	10	

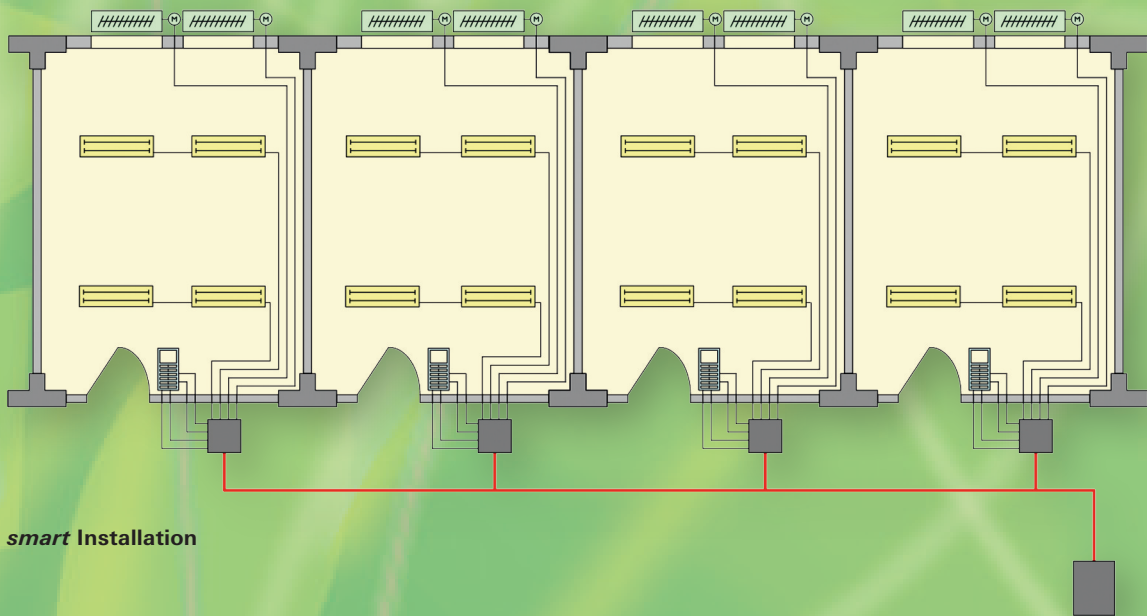


LEED certificate Silver

▲ Many criteria of the certification systems are positively influenced by *gesis* CON and *gesis* ELECTRONIC.



Conventional installation

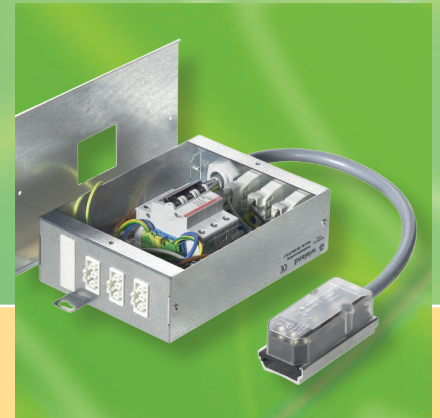


smart Installation

▲ The clear structures of a *smart* Installation are evident and improve the energy balance of a building.



gesis® NRG
the flexible busbar for efficient infrastructure cabling



gesis® RAN
the project-specific distribution unit for *smart* Installation



gesis® CON – pluggable sustainability.

Advantages of a distributed electrical installation.

Cabling based on *smart* Installation concepts creates clear installation structures. In combination with the pluggability this leads to a quickly and safely installable system.

Cost reduction after the initial installation also occurs for maintenance and change of use during the life cycle of the building.

Due to the consistent three-phase wiring up to just before the consumer also reduces the voltage drop which increases the energy efficiency.

Advantages distributed:

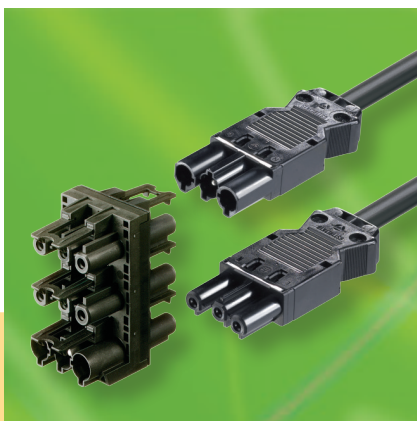
- lower voltage drop due to three-phase current up to just before the consumer
- smaller main-distribution/utility rooms
- reduced copper demand
- structured cabling

Advantages pluggable:

- less prone to errors
- safe installation
- industrially pre-assembled quality
- flexible
- reusable
- faster installation
- structured cabling

Conclusion:

Reduced energy consumption and costs in construction phase and life cycle of a building.



gesis® CON

the pluggable electrical installation for floor-boxes, lighting, ...



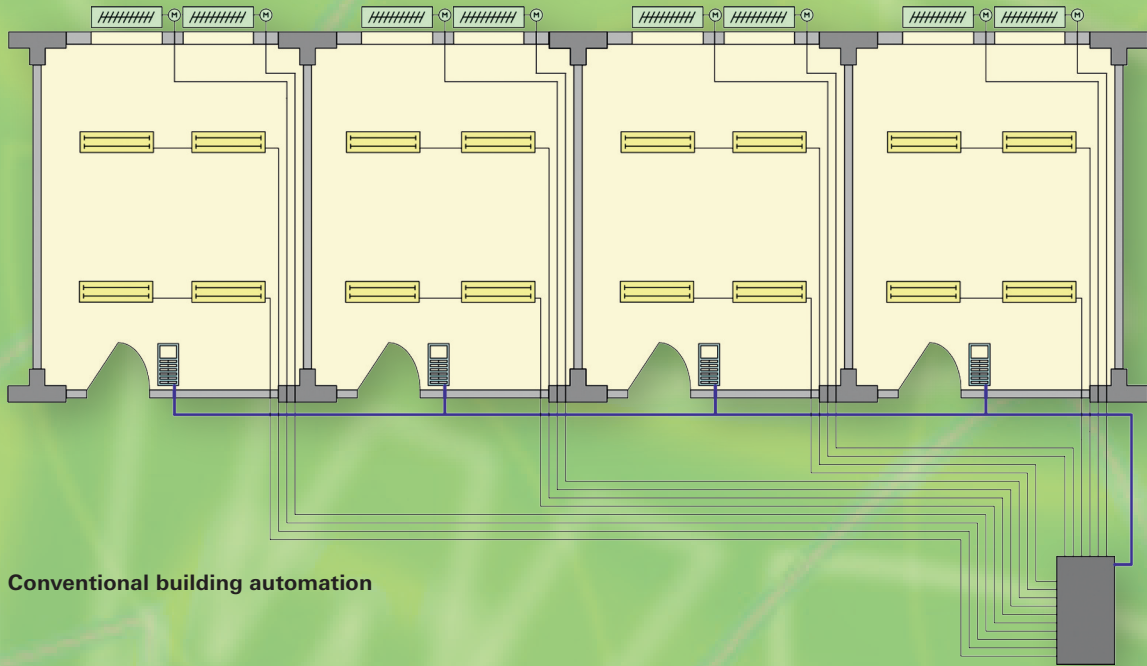
gesis® MINI

the size optimized version for limited space

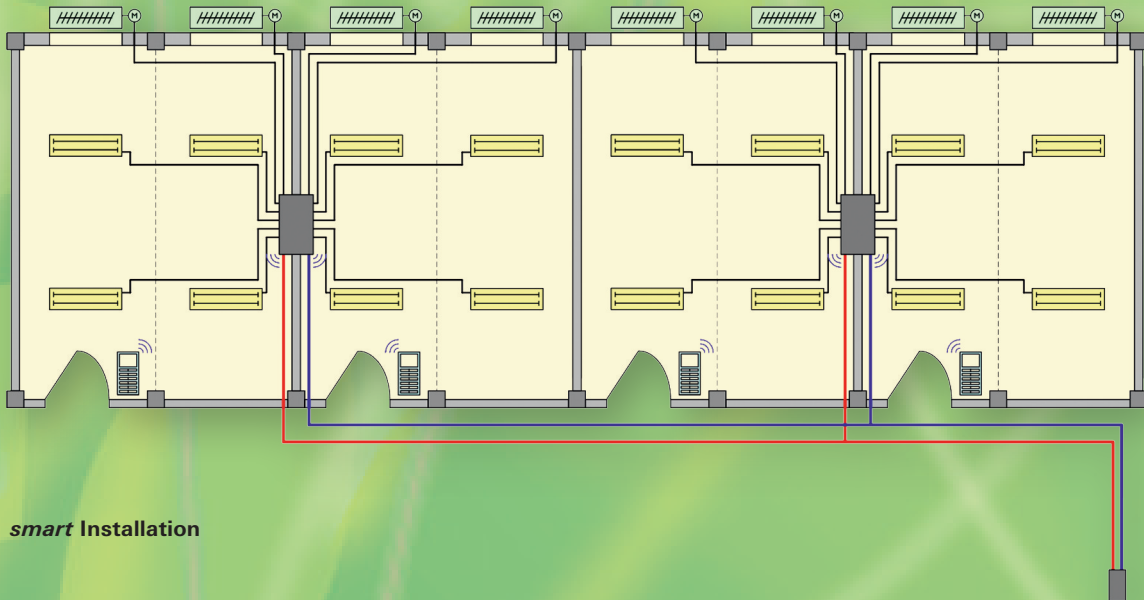


gesis® MICRO

the miniaturized version for lamps of the future



Conventional building automation



smart Installation

▲ The decentralized structures of a *smart Installation* are evident and further increase the space efficiency of a building.



gesis[®] RC
batteryless radio technology
for wireless sensors



gesis[®] EIB V
flat, pluggable KNX actuators
for limited space



gesis[®] ELECTRONIC – pluggable energy efficiency. Advantages of distributed building automation.

Modern automation systems reduce the primary energy consumption of a building. *smart* Installation concepts additionally implement the basic idea of a bus-based system by placing the components close to the consumers.

In combination with pluggability this leads to a flexible system whose functionality can be adapted quickly and easily to change of use throughout the life cycle of a building.

A consistent implementation can also improve the space efficiency of a building due to smaller utility rooms.

Advantages distributed:

- smaller main-distribution/utility rooms
- considerably reduced wiring expenses
- reduced copper demand
- safety (to some extent fully functional during a bus failure)
- flexible to change of use
- structured cabling

Advantages pluggable:

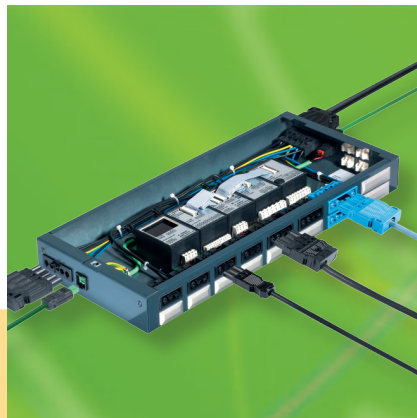
- less prone to errors
- safe installation
- industrially pre-assembled quality (**gesis** RAN)
- flexible
- reusable
- faster installation
- structured cabling

Conclusion:

Reduced energy consumption and costs in construction phase and life cycle of a building.



gesis[®] EIB M2
the modular, pluggable KNX system
for maximum flexibility on site



gesis[®] RM
the modular, project-specific system
for KNX and LON



gesis[®] KNX
the required components
for a complete system



Awarded "platinum". Reference "An den Brücken", Munich.

Building MK1 at Arnulfpark in Munich is the first office building in Germany awarded platinum according to LEED V3.0. The neighboring building MK2 was awarded LEED gold.

Wieland has accompanied the electrical planner from an early stage on and provided support in realizing the *smart* Installation concept. Therefore, the planner was able to develop the optimal solution for the required application. Easily comprehensible overviews enhanced the comprehension and acceptance of the investor.

The required flexibility with a large number of possibly rented areas on each floor were significantly supported by the *smart* Installation concepts.

The pluggable automation components at distributed locations enable a quick realization of short term changes of use. For the optimal conceptual design the planner was supported by Wieland project managers.

Wieland components::

gesis® EIB V for distributed, directly pluggable control of the roller blind drives and reception for EnOcean wirelessradio switches

gesis® RAN for distributed, directly pluggable control of the roller blind drives

gesis® RM modular automation system for cost-efficient and flexible extension of the **gesis** RAN-distribution unit, tailored to the locally required functions

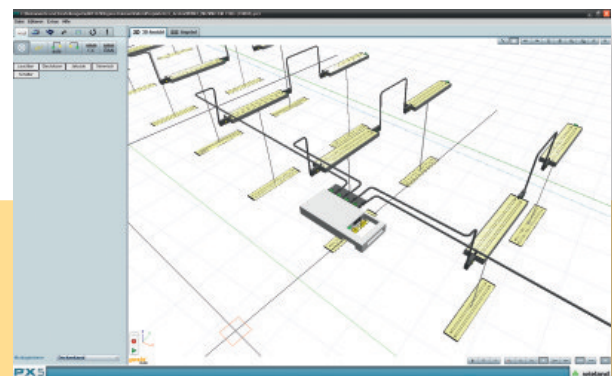
gesis® DALI for cable saving, flexible lighting control

gesis® RC for manual control of lighting and roller blinds with EnOcean switches

gesis® CON for structured, pluggable cabling of lighting and roller blind drives



▲ For connecting the batteryless EnOcean radio system to the KNX building automation, decentralized, directly pluggable gateways were used.



▲ The *smart* Installation concept was simulated beforehand using **gesis** PLAN and introduced to the client.





▲ The optimal types and numbers were agreed with the planner using easily comprehensible overviews.

Documented sustainable construction.

Further references



Süddeutscher Verlag, Munich

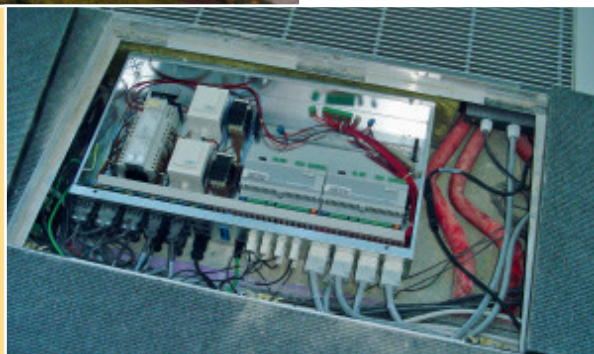
The first office building in Germany to be awarded LEED gold, is the administrative building of Süddeutscher Verlag in Munich. Since many properties have already been equipped with Wieland technology, the *smart* Installation concepts were also favored for the new buildings. In close cooperation between client, electrical engineer and the Wieland project management, an infrastructure based on flat cable systems was created for supplying the decentralized, pluggable distributor units and floor-boxes. The distributor units contain the automation components used for controlling the distributed air conditioning, lighting and sunlight protection.

Wieland components:

- gesis[®] RAN** for distributed, directly pluggable control of lighting, roller blind drive, air conditioning as well as for decentralized distribution and safety units for the 230/400 V infrastructure in the raised floor
- gesis[®] CON** for supplying the 230 V infrastructure up to the desk and for wiring the bus technologies for air conditioning, lighting and roller shutters (DALI and LON)
- gesis[®] NRG** for supplying the 230/400 V infrastructure in the raised floor



Photographer: Claus Graubner; architects: GKK+Architekten Prof. Swantje Kühn, Oliver Kühn.



◀ The building automation components for lighting, roller blinds and air conditioning system were installed decentralized as **gesis[®] RAN** distributor units in the floor.





Neue Börse, Frankfurt

“The Cube”, the new Deutsche Börse head office in Frankfurt, is the first high-rise office building in Germany awarded LEED platinum. Based on positive experience from several other projects, the contractor from HKL favored the familiar *smart* Installation technology with pre-assembled **gesis**[®] RAN distribution units. Furthermore, the thermal drives were supplied by Wieland with pre-assembled, pluggable connection cables, which were mounted and assembled quickly and safely on site.

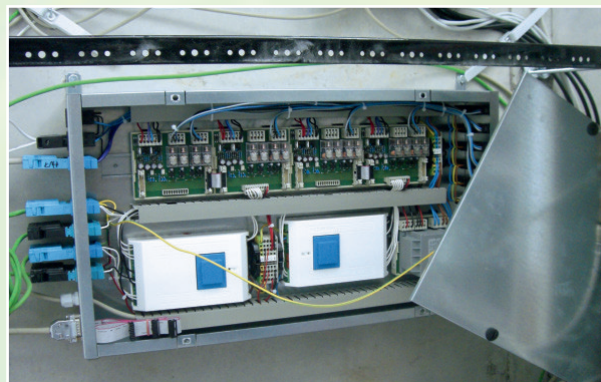
smart Installation concepts were also used for wiring the dimmed lighting and the floor-boxes. For example, a pluggable design was chosen as the supply for the floor-boxes. For safe differentiation two different sets of coding are used for standard electrical power supply and IT network. To minimize line loss, the three-phase cables were installed as close to the consumer as possible.



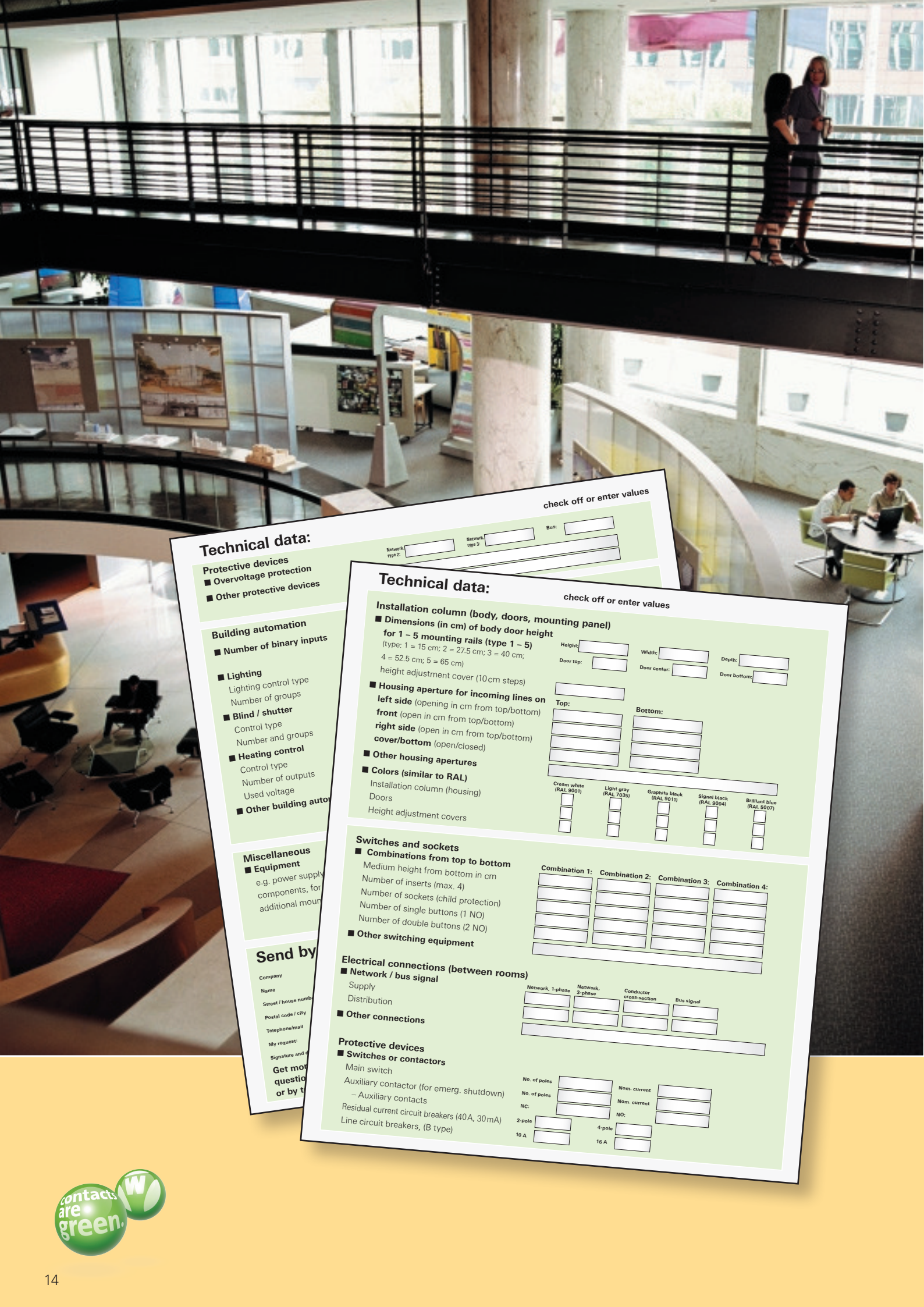
Wieland components:

- gesis**[®] RAN for distributed installation of the single-room controllers for controlling the heating/cooling ceilings
- gesis**[®] CON for safe and quick connection of thermo drives via pre-assembled cables as well as for the pluggable version of the lighting and floor-box cabling

▼ The single room controllers were installed decentralized in the floor using preassembled **gesis**[®] RAN distribution units.



▲ A pluggable version was chosen for the wiring of the dimmed lighting.



Technical data: check off or enter values

Network type 2:
 Network type 3:
 Bus:

Technical data:

- Protective devices
 - Overvoltage protection
 - Other protective devices

- Building automation
 - Number of binary inputs

- Lighting
 - Lighting control type
 - Number of groups
- Blind / shutter
 - Control type
 - Number and groups
- Heating control
 - Control type
 - Number of outputs
 - Used voltage
- Other building automation

- Miscellaneous
 - Equipment
 - e.g. power supply components, for additional mounting

Send by

Company
 Name
 Street / house number
 Postal code / city
 Telephone/email
 My request:
 Signature and stamp

Get more questions or by t

Technical data: check off or enter values

Installation column (body, doors, mounting panel)

Dimensions (in cm) of body door height for 1 – 5 mounting rails (type 1 – 5)
 (type: 1 = 15 cm; 2 = 27.5 cm; 3 = 40 cm; 4 = 52.5 cm; 5 = 65 cm)
 height adjustment cover (10 cm steps)

Height: Width: Depth:
 Door top: Door center: Door bottom:

Housing aperture for incoming lines on left side (opening in cm from top/bottom)
front (open in cm from top/bottom)
right side (open in cm from top/bottom)
cover/bottom (open/closed)

Other housing apertures
Colors (similar to RAL)
 Installation column (housing)
 Doors
 Height adjustment covers

Cream white (RAL 9001)	Light gray (RAL 7035)	Graphite black (RAL 9011)	Signal black (RAL 9004)	Brilliant blue (RAL 5007)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Switches and sockets

Combinations from top to bottom
 Medium height from bottom in cm
 Number of inserts (max. 4)
 Number of sockets (child protection)
 Number of single buttons (1 NO)
 Number of double buttons (2 NO)

Other switching equipment

Combination 1:	Combination 2:	Combination 3:	Combination 4:
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Electrical connections (between rooms)

Network / bus signal
 Supply
 Distribution

Other connections

Network, 1-phase	Network, 3-phase	Conductor cross-section	Bus signal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Protective devices

Switches or contactors
 Main switch
 Auxiliary contactor (for emerg. shutdown)
 – Auxiliary contacts
 Residual current circuit breakers (40 A, 30 mA)
 Line circuit breakers, (B type)

No. of poles	<input type="text"/>	Nom. current	<input type="text"/>
No. of poles	<input type="text"/>	Nom. current	<input type="text"/>
NC:	<input type="text"/>	NO:	<input type="text"/>
2-pole	<input type="text"/>	4-pole	<input type="text"/>
10 A	<input type="text"/>	16 A	<input type="text"/>



Our experience, your advantage. Optimizing the application.

Time is money – and mostly limited

Using our calculation lists and questionnaires you can quickly and safely generate a calculation for your applications.

Download the Wieland optimization tools from our website, or – even more simple – get the calculation aids directly onto your smart phone or tablet using the following QR code.



Calculation aid gesis RAN distribution box
(dated 21 Oct. 2009)

Bus system	KNX	LON	Outputs
230V		400V	Outputs
Power supply			Outputs
			1
Lighting			Outputs
			1

gesis RAN parts list (dated 21 Oct. 2009)

Customer: _____
 Project: _____
 Request dated: _____
 Part No.: _____
 Quantity: _____

gesis RM components & accessories

Type	Description / short text	Part No.	Pcs.
RM2-BAS	gesis LON RM base unit	83.020.0300.3	
RM2-BAS	gesis EIB RM base unit	83.020.0400.0	
PS	gesis RM power supply unit (2-fold)	83.020.0401.0	
PS 12/5	gesis RM power supply unit (2-fold)	83.020.0421.0	
PS 12/5	gesis RM binary output 2-fold	83.020.0402.0	
PS 12/5	gesis RM switching output 4-fold	83.020.0402.0	
PS 12/5	gesis RM switching/dimming output 2-fold (1-10V)	83.020.0402.0	
PS 12/5	gesis RM semiconductor switch 4-fold		
PS 12/5	gesis RM sunblind output 2-fold (24V DC)		
PS 12/5	gesis RM EnOcean radio input (2 x 8-fold)		
PS 12/5	gesis RM universal dimmer 2-fold (2 x 2)		
PS 12/5	gesis RM DALI actuator 2-fold		
PS 12/5	gesis RM semiconductor switch 4-fold		
PS 12/5	gesis RM semiconductor switch 4-fold		
PS 12/5	gesis antenna 868 MHz with SMA con		

Configurator gesis RAN KNX/LON RM
The fitting distribution box for your smart installation project

Decentral, pluggable gesis RAN offer solutions for a lasting electrical installation

New project English

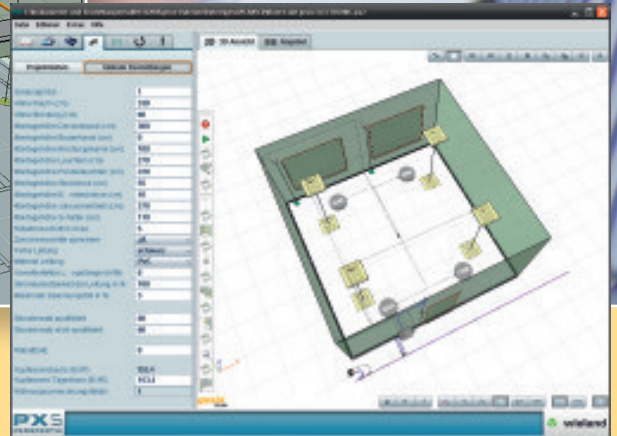
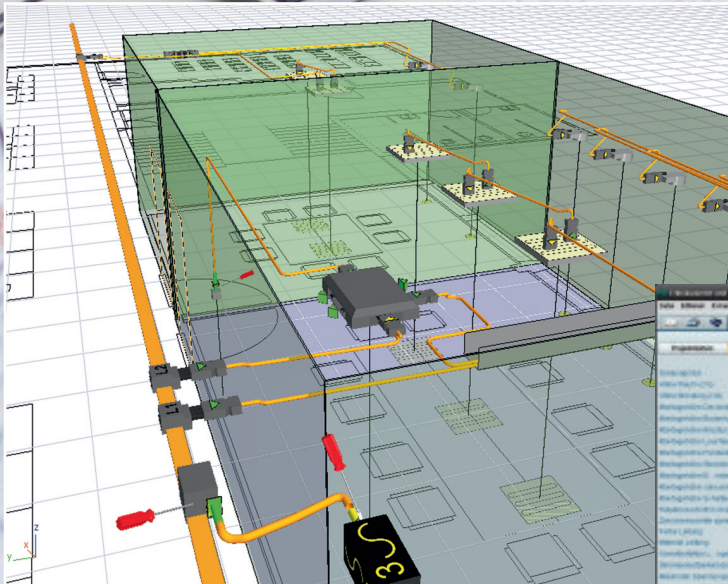
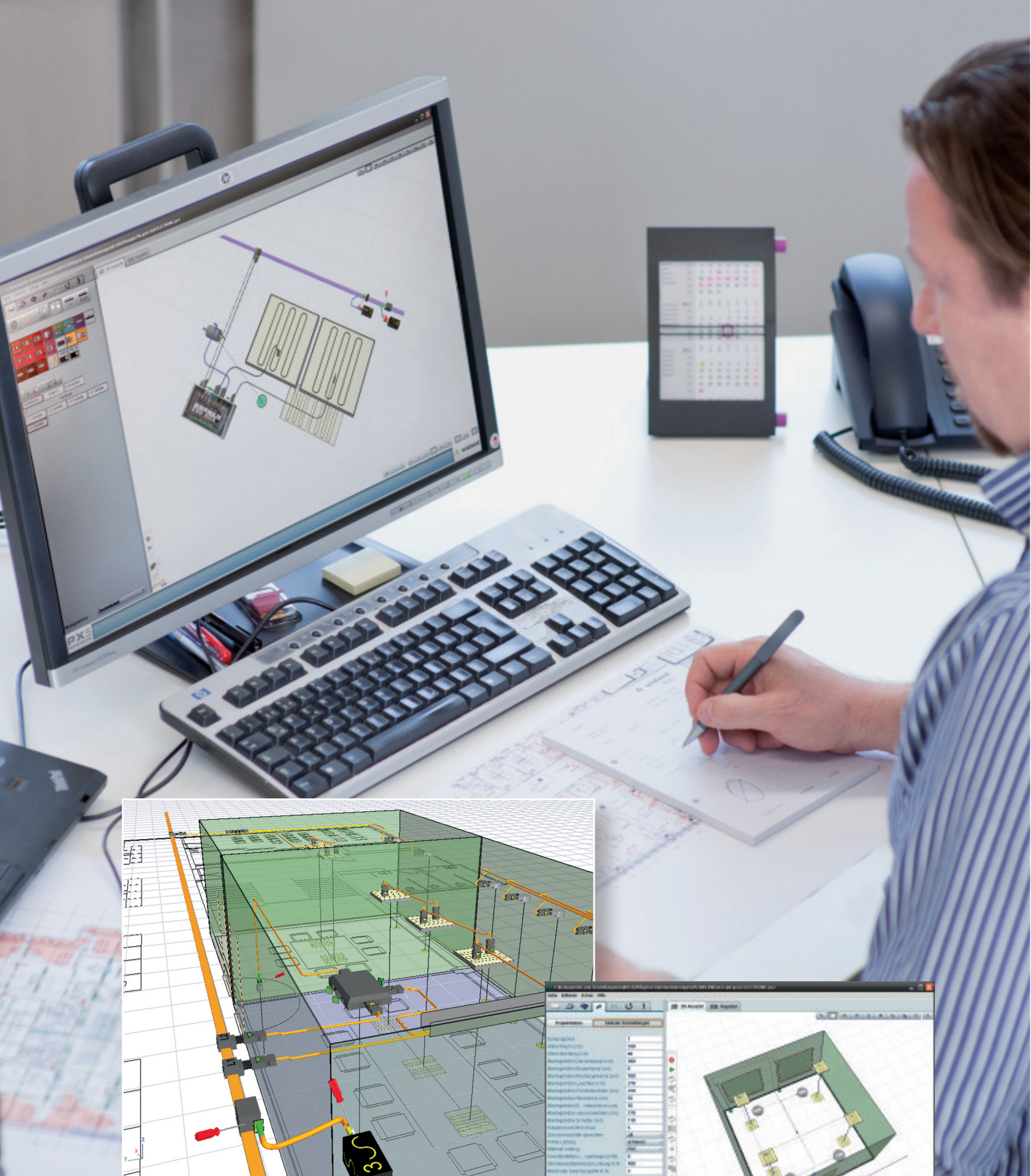
Functional description

Bus system	KNX	Supply voltage	AC 400 V	Number of groups	4
Lighting system I	Type	direct switched		Number of groups	2
Lighting system II	Type	dimmed (DALI)		Number of drives	2
Shutter system I	Type	AC 230 V		Number of drives	
Shutter system II	Type			Number of drives	
Window drives	Type			Number of groups	
Heating/Cooling	Type			Number of inputs	
Binary sensor inputs	Type	Lighting push-button		Number of push-buttons	8
Binary push-button inputs	Type			Number of inputs	
Binary RC inputs	Type				

Distribution box type: **gesis RAN KNX RM 234A AC400V**

Project name: _____
 Quantity / Requested delivery date: _____
 Company: _____
 Company contact: _____
 Address / building number: _____
 City / ZIP code: _____
 Phone / e-mail: _____

Forward via fax: +49 951 9326-996 or via e-mail (just click)



gesis® PLAN 3D for the presentation. Display of the planning.

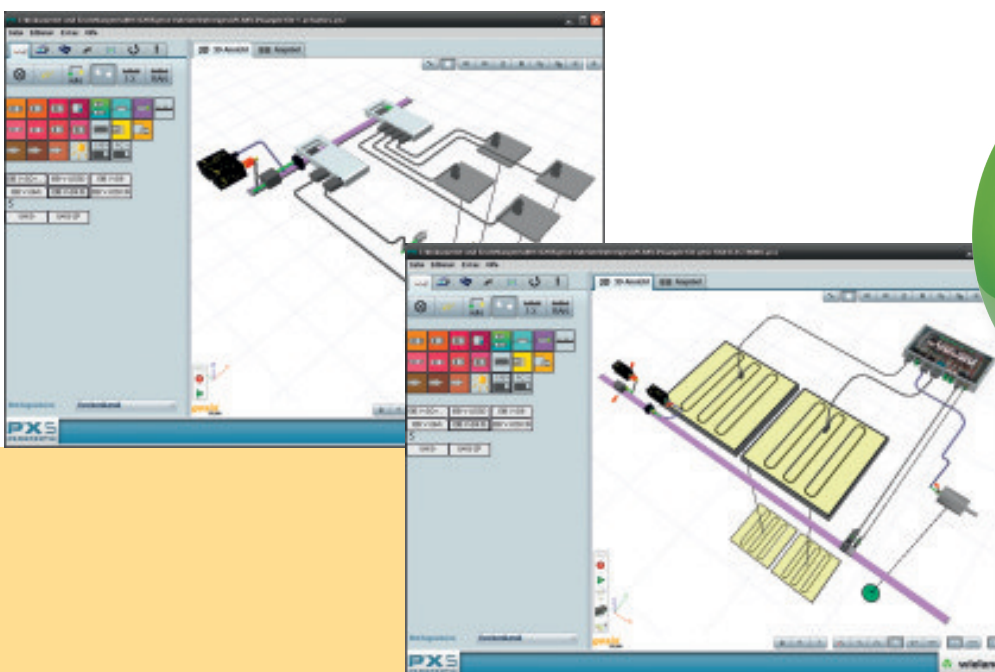
The **gesis** PLAN demonstration and planning software is a tool for conveniently designing and calculating pluggable electrical installations with **gesis**. The software supports specialist planners as well as system integrators, architects and clients in the electrical design of buildings.

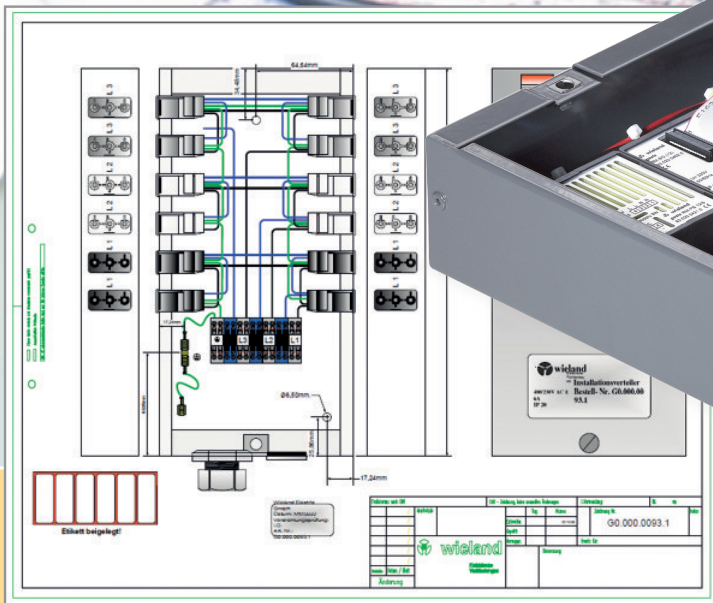
The software imports the existing DWG/DXF drawings of the rooms and building parts to be installed. The required consumers, such as lamps, sockets, roller blinds etc., are placed into the 3D view on the PC, and **gesis** ELECTRONIC components, **gesis** RAN distributor units and **gesis** NRG flat cables are wired with only a few mouse-clicks. The recommended connector encoding is automatically taken into account, and the compliance with standards is checked. The installation is also calculated regarding permitted currents, voltage drops or selectivity. Possible problems are immediately indicated by the software. As a result, the planner receives an item list with exactly calculated cable lengths and price details.

The **gesis** PLAN software serves as efficient planning aid for functional buildings with flexible use of space and facility management and its usage is not only reasonable for new buildings. For building renovation it supports the reliable preliminary planning through exact calculations. Without expert knowledge the user can start right away; software wizards guide him accurately through the various screens.

The uniquely convenient solution does not only take into account the electrotechnical installation requirements, but is also capable of simulating the spatial conditions due to beams, additional walls, columns, and automatically takes them into account for cabling.

This is based on the experience of many years by the Wieland project support. It is possible to plan not only individual rooms, but also stories and entire buildings.





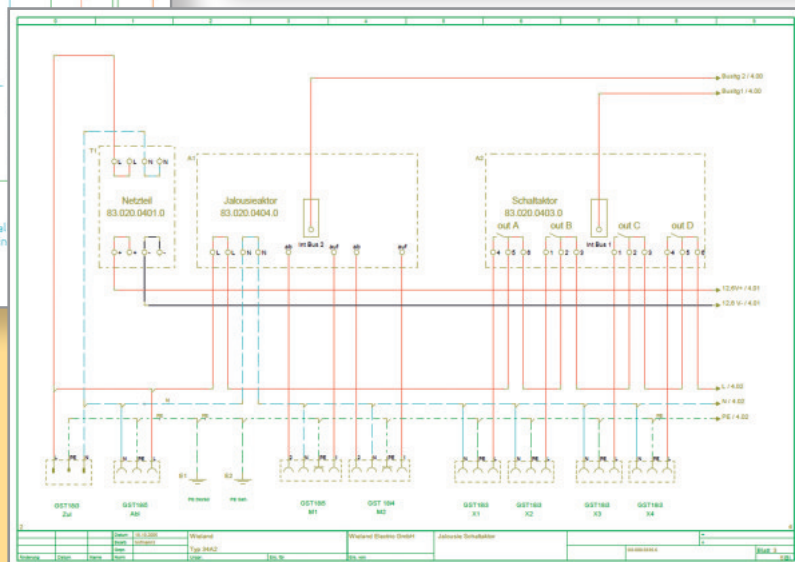
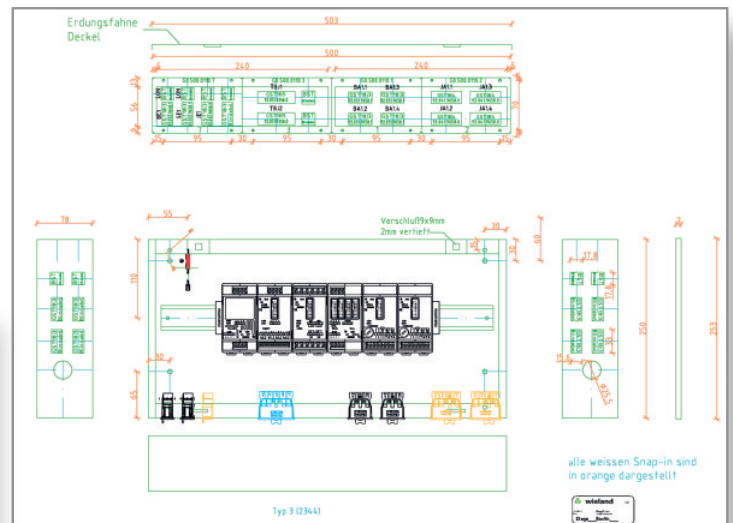
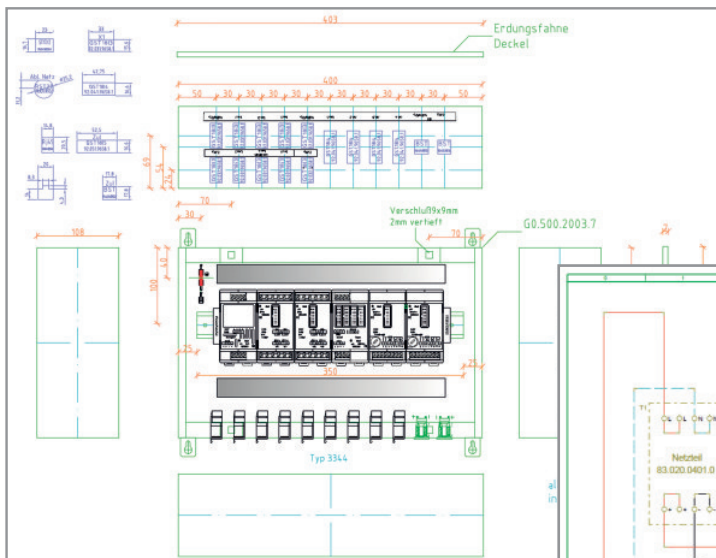
Documentation and plans. Implementing the requirements.

The flexible use of buildings does not only require an appropriate design during construction. The documentation of the installed systems must meet these requirements.

Documenting the installed components plays a vital role. Wieland generates assembly and wiring plans for each individual distributor unit. All designations for inputs and outputs as well as details on the installation location are documented here.

We strictly follow your specified needs and requirements. You will receive a complete documentation of your plant, which you can use to plan inspections, maintenance and extensions in advance without taking an inventory on site.

This creates planning safety across the entire lifecycle of the building.



Spanning various industries and products.



0600.1 „**gesis** CON Electrical installation of buildings via plug&play“



0602.1 „**gesis** LINECT Universal Connector System for Recessed Luminaires“



0640.1 „**gesis** MINI the pluggable electrical installation with a compact design“



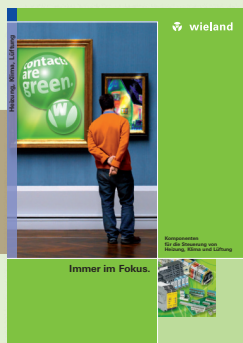
0125.0 „**selos** DIN rail terminal blocks with screw connection“



0124.0 „**fasis** DIN rail terminal blocks with tension spring connection“



0401.1 „Electro-technical solutions for the control cabinet“



0402.1 „Components for heating, ventilation, and air conditioning“



0404.1 „Decentralized building automation with plug&play“ Educational facilities



0008.6 „Environmental statement Locations Bamberg and Sokolov“



0009.0 „Wieland apprenticeship Auf der Erfolgsstraße.“



0003.1 „The system partner in automation technology and in building automation technology“



0690.1 „gesis^{IP+}
Pluggable electrical
installations in IP65 to IP68“



0700.1 „gesis^{ELECTRONIC}
Decentralized building
automation with plug&play“

Building and installation techn.

Automation technology

Further documents and brochures can be downloaded quickly and easily via the Download Center on our homepage.



0409.1 „gesis^{RAN}
Decentralized installable
electronic distributor for
building automation“



0710.1 „gesis^{SOLAR}
Electrical Installation Technology
for Photovoltaics“

Industries

Wieland connects.



Wieland 100 years in Bamberg.

Wieland is one of the most important employers in Bamberg and the surrounding area. The book portrays the life of the company's founder Friedrich H. („Fritz“) Wieland and the following generations, closely intertwined with the company's history. Available in bookshops.

smart Installation solutions by Wieland.

Further information.

Technical support

Automation technology:

- DIN rail terminal blocks **fasis**, **selos**
Phone: +49-9 51-9324-991
- Safety technology **safety**
Phone: +49-9 51-9324-999
- Remote I/O **ricos**
Phone: +49-9 51-9324-995
- Power supply, surge protection, measuring and monitoring relays, timer relays, coupling relays, analog modules, passive interfaces **interface**
Phone: +49-9 51-9324-995
- Remote power distribution **podis®**
Phone: +49-9 51 9324-998
- Industrial multipole connectors **revos**
Phone: +49-9 51-9324-997
- Appliance terminals, European terminal strips
Phone: +49-9 51-9324-993
- Housings for electronic components, PCB terminals and connectors **wiecon**
Phone: +49-9 51-9324-994

Fax: +49-9 51-9326-991
e-mail: AT.TS@wieland-electric.com

Hotline numbers Sales:

- Questions for Sales on availability, delivery schedules, and pricing Phone: +49-951-9324-990

Technical support

Building services engineering:

- System connectors for building installation
gesis, **gesis** RAN, **gesis** ELECTRONIC
Phone: +49-9 51-9324-996
- Photovoltaics **gesis** SOLAR
Phone: +49-9 51-9324-972
- DIN rail terminal blocks **fasis** BIT, **selos** BIT
Phone: +49-9 51-9324-992

Fax: +49-9 51-9326-996
e-mail: BIT.TS@wieland-electric.com

Additional information for pluggable installation:

- | | |
|---------------------|-----------------|
| gesis CON | |
| The Art of Plugging | Part No. 0600.1 |
| gesis IP+ | Part No. 0690.1 |

Decentral Electronic:

- | | |
|-----------------------------|-----------------|
| gesis ELECTRONIC | |
| Everything follows a system | Part No. 0700.1 |
| gesis RAN | |
| Intelligent distribution | Part No. 0409.1 |

Installation column

- | | |
|---------------------------|-----------------|
| Electronics with pay back | Part No. 0404.1 |
|---------------------------|-----------------|

Information about Wieland products in general:

- | | |
|---------------------------------|-----------------|
| Wieland Product Overview | Part No. 0003.1 |
|---------------------------------|-----------------|

General information and news:

www.wieland-electric.com
Visit our e-CAT at
<http://eshop.wieland-electric.com>



Our subsidiaries

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www.wieland-electric.com



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Industrial technology

Solutions for the control cabinet

- DIN rail terminal blocks
 - Screw, tension spring or push in connection technology
 - Wire cross sections up to 240 mm²
 - Numerous special functions
 - Software solutions interfacing to CAE systems
- Safety
 - Safe signal acquisition
 - Safety switching devices
 - Modular safety modules
 - Compact safety controllers
 - Applicative consultancy and training
- Network engineering and fieldbus systems
 - Remote maintenance via VPN industrial router and VPN-Service portal
 - Industrial Ethernet switches
 - PLC and I/O-Systems, standard and increased environmental conditions
- Interface
 - Power supply units
 - Overvoltage protection
 - Coupling relays, semiconductor switches
 - Timer relays, measuring and monitoring relays
 - Analog coupling and converter modules
 - Passive interfaces

Solutions for field applications

- Remote installation and automation technology
 - Electrical installation for wind tower
 - Fieldbus interfaces and motor starters
- Connectors for industrial applications
 - Rectangular and round connectors
 - Aluminum or plastic housings
 - Degree of protection up to IP68
 - Current-carrying capacity up to 100 A
 - Connectors for hazardous areas
 - Modular, application specific technology

PC board terminals and connectors

- Screw or spring clamp connection technology
- Spacings: 3.5 mm to 10.16 mm
- Reflow or wave soldering process

Building and installation technology

- Building installation systems
 - Main power supply connectors IP20/IP65...IP68
 - Bus connectors
 - Low-voltage connectors
 - Power distribution system with flat cables
 - Distribution systems
 - Bus systems in KNX, LON and radio technology
 - DIN rail terminal blocks for electrical installations
 - Overvoltage protection

contacts
are
green.