# wieland



# Heating, Ventilation, Air Conditioning

Intelligent System Solutions











# QUICK OVERVIEW FOR PROFESSIONALS

Watch our information video for the HVAC sector on **YouTube** – you'll be glad you did!



You Tube



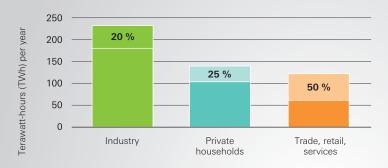


# Did you know?

## Energy efficiency pays.

#### Energy efficiency pays.

Potential savings in electricity consumption in Germany by sector.



For more information, see: www.stromeffizienz.de

Source: dena/BMWi-Energiedaten, as of 10/2011

#### Heating systems in Europe.



#### Heat output in kWh/m²a

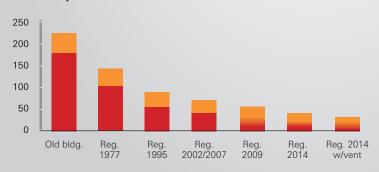


Fig.: Ventilation heat loss as share of total heat requirements

Ventilation heat requirement

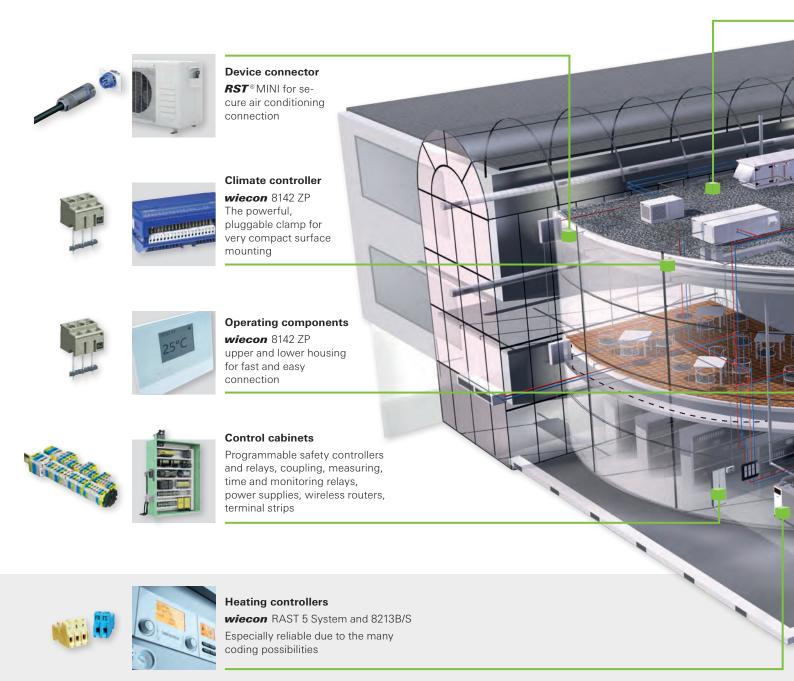
Transmission heat loss

Example: Apartment building

Percentage of ventilation heat loss without heat recovery today up to 50% of heating output, reduction possible up to 50%

# **HVAC** Solutions by Wieland Electric.

Wieland is your partner for energy-efficient solutions and components. We offer outstanding products for the HVAC sector and plant engineering for power conduction, distribution and customer-specific applications.





#### **Power distributors**

RST ® CLASSIC - pluggable distributors with maximum IP protection





#### Signal distributor

**wiecon** FSC – extremely fast signal distributor in the control cabinet





#### **Device connector**

**RST**®CLASSIC - the all purpose solution for fast connection





#### **Detector**

gesis® presence detector assembled with GST18® line

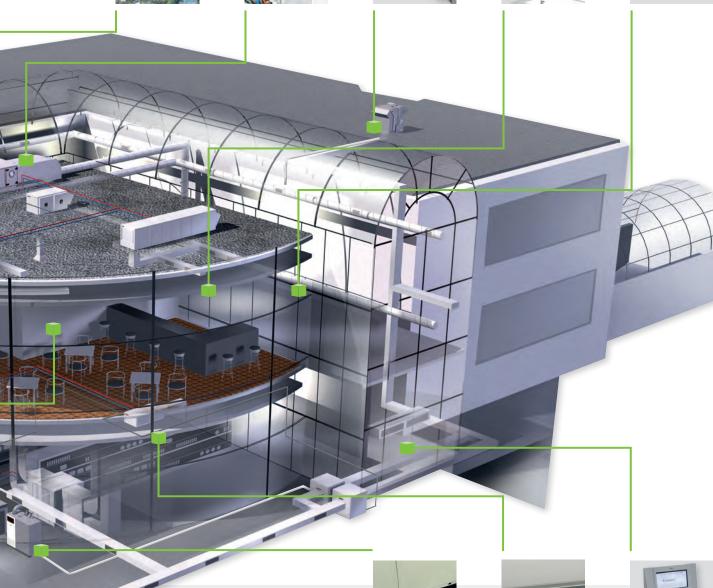




#### **Connection cables**

**gesis**® GST15 small size, large performance











#### Distribution and forwarding

gesis® GST18®-the connection with numerous functions





#### Time recording/ reporting systems

**wiecon** 8593 THR secure connection technology with small dimensions













### **SERVICE**

Not only will your final customer benefit from our safe and reliable products, as our customer, you profit as well. We at Wieland not only offer components, we help you choose the right product, provide you with planning software (gesis®PLAN, wieplan CLICK2BUY) for fast project planning and we support you with our comprehensive and always up-to-date eShop. Here you will find the complete documentation for the desired product.











# System supplier for the HVAC sector.

ur highest goal of our system and machine construction for the HVAC sector is reliable and safe energy distribution. In times of increasing competition and change in the sector, the efficiency of the products and components used plays a decisive role. Wieland offers you great solutions for the most varied connection technology requirements. Wieland products score points for their fast installation, reliability and freedom from maintenance by design.

Learn more about our systems for your products and systems:

Circuit board connections starting page 10

Installation systems starting page 14

Control cabinet starting page 18







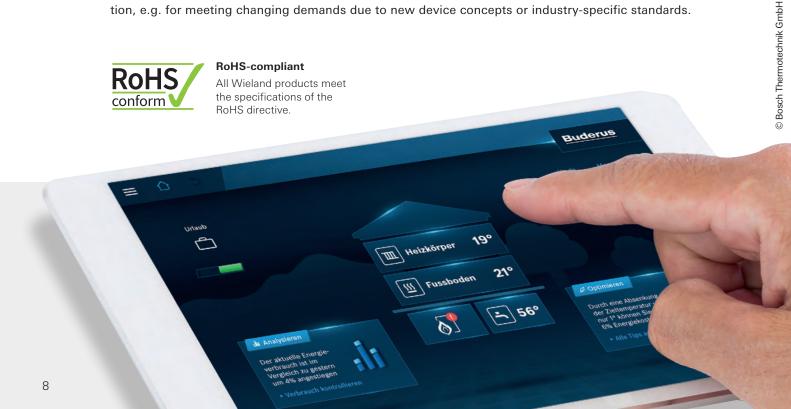


# Heating, ventilation, air conditioning

Electromechanical and electronic components for a green future.



o other sector today works with such an efficient mix of various energies as the heating sector. In the ventilation and air conditioning sector, building climate is regulated through comprehensive approaches without losing valuable heat to the outside. Wieland has been one of the main suppliers in these industries for decades. Wieland Electric is your strong partner with a variety of specific solutions and innovative product developments along with intensive consultation, e.g. for meeting changing demands due to new device concepts or industry-specific standards.



# Perfect Components.



### Heating

- Gas/oil condensing boilers
- Heat pumps
- Biomass boilers
- Combined heat and power plants

#### Possible applications, such as in building controllers

- Individual distributor solutions
- Pre-manufactured cables, e.g. GST18®/GST15
- · Color-coded circuit board terminals, e.g. 8142 ZP





### Air conditioning Ventilation

- Ventilation and air conditioning
- Air conditioning systems
- Thermostat controls
- Louver controls
- Shutter controls
- Pump and fan controls

#### Possible applications, e.g. in air conditioning controllers

- Space-saving circuit board terminal solutions, e.g. 8105
- Flexible connection lines between isolated applications, e.g. FSC system
- Connection lines GST18®
- Secure outdoor connection cables RST®CLASSIC



#### Access control

- Access systems
- Time terminals

#### Possible applications, e.g. in operator units

- Printed circuit board terminal, small pitch for compact footprint, e.g. 8562N, 8593
- Printed circuit board connectors, large selection of connection devices and products, e.g. 8813, 8513, 8113, 8213









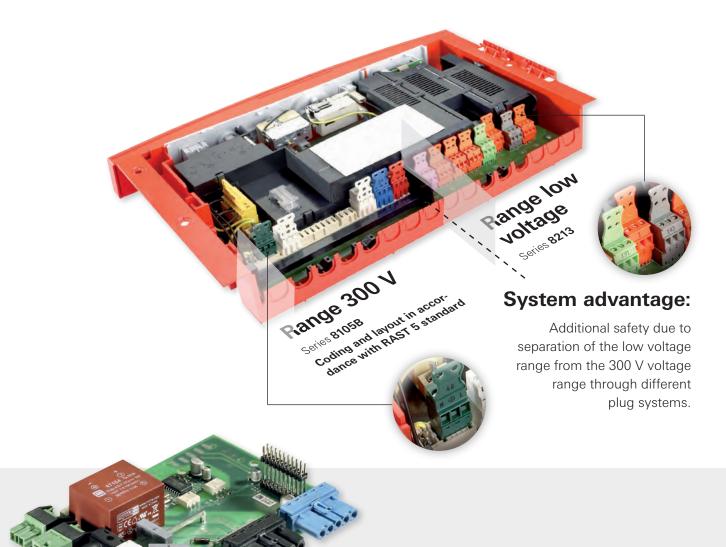
Service.

If you have questions, please contact us at

Tel.: +49 951 9324-991 or at.ts@wieland-electric.com

# Functional solutions for circuit board connections.

re you looking for the right connector for circuit boards? We have the right solution for you. The **wiecon** and **gesis**® portfolio offers you numerous products with a wide variety of connection technologies. Whether service-friendly connectors or proven circuit board terminals, at Wieland you will find the right products for **power**, **data and signal transfer**. With our broad portfolio, we offer you varied, reliable and service-friendly solutions of the highest quality.





#### Individual markings

Printed using pad printing or ink jet process, also multicolored, 2D code with customer-specific data possible, large marking surfaces



#### Clear assignment

Color distinction with customer-specific printing



## Automation advantages through Tape on Reel

Lower production costs and variant reduction, as **THR** parts are also suitable for wave soldering, saving of process steps

More time for your core business!



No incorrect plugging



Fast, safe installation



**Space-saving** 



**Customized solutions** 



## Mechanical coding, pluggable or with tools

Special coding tab and profiles prevent plugging mistakes



#### Specially fitted

For example, with internal bridging, jumpers, empty poles, pull-out help



#### Innovative interlocking

Lock and release interlocking, screw flange and locking flange



11

## wiecon

# Printed circuit board terminals, circuit board connectors and RAST 5 system.



#### **Features:**

- Wide range of variants
- With screw, tension spring and push-in connection
- Numerous components in accordance with "No Flame" requirement EN 60335-1
- Broad spectrum of standard colors
- 13 additional "No Flame" colors
- Various coding possibilities
- Customer-individual printing
- Certified in accordance with VDE, UL and CSA

No Flame colors	
	Pure white
	Sulfur yellow
	Rapeseed yellow
	Salmon orange
	Dusky pink
	Pastel violet
	Light blue
	Moss green
	Light green
	Silver gray
	Slate gray
	Black gray
	Gray brown

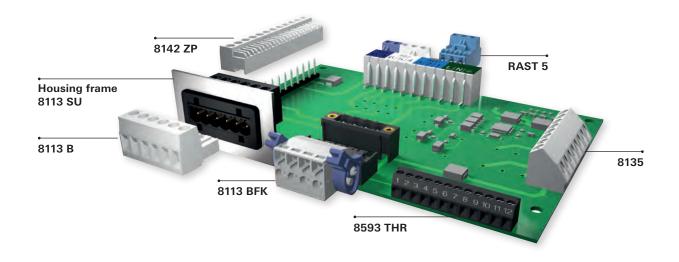




#### Used with controllers of:

- Gas/oil condensing boilers
- Heat pumps
- Combined heat and power plant
- Refrigeration, air conditioning and ventilation equipment
- Access control systems





# FSC Fast signal connection.

The pluggable signal transfer - no mistaken connections.



The future of the control cabinet!

Transmit signals quickly, safely, flexibly and efficiently.







wiecon Catalog Overview of printed circuit board terminals and connectors

Art.No. 0580.0

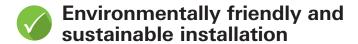


# Electrical installation systems – our complete solutions.











- No incorrect plugging thanks to colorand mechanical-coding
- 2-pole to 7-pole
- Connection technology: screw, spring force or crimp connection
- Rated current up to 20A (VDE/CSA/UL) GST®, 25A (VDE), 30A (CSA/UL) RST®, 50A (VDE), 53A (CSA/UL) RST®POWER





ieland offers complete pluggable installation systems, in which it is the world leader: Complex installations from the distributor to every location can be achieved with only four basic components.







**POWER SUPPLY SYSTEM** 







**DISTRIBUTION** 







**FORWARDING** 





**DEVICE CONNECTION** 





CIRCUIT BOARD CONNECTION

The robust, cascadable distributors offer a simple option for expanding the number of pluggable connection possibilities.

Unused distributors are closed with covers protected against spraywater.



# gesis® GST15 / GST18® / ST18

Connector – for secure installation



#### GST15

The small connectors for extremely confined spaces

2- to 5-pole design, 250/400V, 16A (CSA/UL 600V, 20A)



#### GST18®

All-rounders with the most comprehensive portfolio

3- to 6-pole design, 250/400V, 20A (CSA/UL 600V, 20A)



#### **ST18**

The standard in the heating industry in accordance with DIN 4791

3- and 7-pole design, 250/400V, 16A (CSA/UL 600V, 20A)

he standardized, million-fold proven Wieland ST18 connector connects the boiler controller and burner. The ST18 in various models is used both for the first and also the second burner stage. Our GST makes the connection to the burner controller and is available as a 2-, 3-, 4-, 5- or 6-pole variant.



## Catalog *gesis*® pluggable electrical installations

for indoor applications

Art.No. 0670.1





#### **Features:**

- Touch-safe (IP 20)
- Fulfills the "No Flame" requirements on request
- Mechanically and color coded, incorrect plugging eliminated
- Pre-manufactured components
- Installation-friendly
- ST18 the standard for heating in accordance with DIN 4791

## **RST®** MINI / CLASSIC / POWER

## Round connector - with maximum IP protection



#### **RST®** MINI

The small connectors for extremely confined spaces

Model 2- to 5-pole design, 250/400V, 16A (CSA/UL 300/600V, 16A)



### **RST®** CLASSIC

All-rounders with the most comprehensive portfolio

Model 2- to 5-pole design, 250/400V, 20 – 32A (CSA/UL 600V up to 30A)



High-current connectors for large

cross-sections
Model 4- and 5-pole design, 250/400V, 50A (CSA/UL 600V, 53A)

A

s a complete installation system in the highest protection class IP66/68/69, the circular connectors in the **RST**® series offer a significant reduction in installation times. The system achieves this with its completely pre-manufactured components.



Catalog RST®
Pluggable electrical installation with the highest IP rating (IP6X)

Art.No. 0690.1





#### **Features:**

- Plug system with IP protection to 69
- Mechanically and color coded
- Touch safe
- Pre-manufactured components
- Installation-friendly
- Variant with ATEX approval and CSA approved Class 1 Div 2

# Efficiency for the control cabinet.

An overview of our control cabinet components.

he switching central, the heart of every system, includes standard components and individual, industry-specific expansions for trouble-free implementation of the control functions. Wieland Electric offers a wide variety of functions with our usual high quality.

In use with:

Heating systems

• Heat pumps

plants

• Gas/oil condensing boilers

• Combined heat and power



RST®
Round Connector Industry
3 sizes (MINI, CLASSIC, POWER)
from 16A, 0.25 mm² to 50A,
16 mm² up to 6AWG and 53A



safety
safety equipment
Programmable safety
controller, safety relays



interface
power supply, coupler relay,
measuring and monitoring
relay



revos industrial connectors Standard, robust for especially demanding requirements



wieplan
CLICK 2BUY
From idea to
completed
rail assembly
in 5 steps



## **Control cabinet**



podis
Pluggable LED luminaires
Stainless steel housing, IP69, different sizes, 24 V, 120 V, 230 V and 277 V



wienet
Industrial communication
technology
Switches, routers, VPN service



interfaceControl cabinet electronicsLightning and surge protection



**selos** / **fasis**DIN rail terminal blocks
Screw, tension spring,
push-in connection







## interface | wienet

Electronics for the control cabinet / industrial communication equipment

henever power flows and signals are processed, *interface* products from Wieland Electric demonstrate their unique strength. With the wide range of relays, power supplies and surge protection components as well as the interface modules and analog modules, each heating system can be adequately equipped. You can network your heating systems with the products of the *wienet* family. The switches link all devices within the systems to each other, and the VPN routers connect to the higher-level networks or the Internet. Our VPN service *Wie-Service24* offers a simple platform for managing your VPN connections

#### **Features:**

- Suitable for DIN-rail mounting
- Voltage, current, phase or temperature monitoring
- Surge protection equipment for maximum system availability guaranteed
- Vibration- and shock-tested in accordance with EN 60068-2
- Fast Ethernet, Gigabit Ethernet,
   Power-over-Ethernet
- Flexible complete VPN solutions

wietap
Lightning and surge



**wipos**Power supply



**flare**Move
Pluggable coupler relay



wienet

Routers and switches





Catalog *interface* solutions for the control cabinet

Art.No. 0800.1



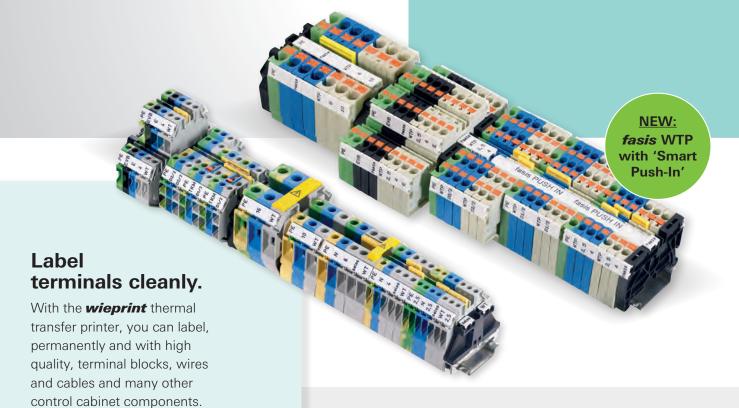
## selos | fasis

DIN rail terminal blocks with screw, spring or push-in connection

upply and distribute power. With the terminal block product families **selos** and **fasis**, you have versatile and durable components for the most varied connection points within the control cabinet. The Wieland terminal blocks permit comprehensive function checks using modular test adapters. Reliability and durability are demonstrated by numerous applications.

#### **Features:**

- Tool-free push-in connection
- Vibration-resistant tension spring connection
- Dual-row, plug-in jumper channel
- Optimized portfolio fewer terminals same functionality
- Integrated unlocking lever with fasis WTP





#### Catalog selos/fasis

DIN rail terminal blocks with screw, tension spring or push-in connection

Art.No. 0500.1





### Safety equipment as an integral part of the system concept

n the area of heating systems, the furnaces are subject to specific standard requirements. A furnace is a technical appliance for heat generation, e.g. at steam boilers, in which defined safety criteria must be monitored, such as lack of water when fuels are supplied to the furnace. If a safety criterion is activated, the fuel supply must be interrupted immediately. Ignition of the fuel as well as monitoring of the furnace are additional parameters that must be monitored in operation to avoid a possible flash fire.

#### **Features:**

- Safety components to SIL3/PL e
- Pluggable screw and spring tension connections
- Possibility for diagnosis
- Communication with all common fieldbus systems
- License-free intuitive software samos<sup>®</sup> PLAN 6
- TÜV-certified in accordance with EN 61508, EN 61511, EN 50156-1 and EN ISO 13849-1
- Modular extendability









Catalog safety

Safe system solutions for automation technology

Art.No. 0860.1

# **podis**® LED

## The maintenance-free lamp

#### **Features:**

- Energy-saving LED technology
- Satisfies requirements for emergency lighting (DIN EN 60598-2-22)
- Suitable for extreme temperature ranges (to -40 °C, to +70 °C)
- Wide voltage range
- Resists shock and vibrations
- Protection class IP 68/69



Brochure *podis*® LED LED lights for use in industrial environments

Art.No. 0832.1

## **revos** Basic M

#### Robust connector

#### **Features:**

- Size 6, 10, 16, 24
- Protection class IP 66 and NEMA 4X
- UV-resistant seal
- Stainless steel bracket and bolt
- For increased demands regarding vibration, ozone and corrosion, corrosion protection NSS > 2000h in accordance with DIN EN ISO 9227



**Brochure** *revos* BASIC M Robust housing series for extreme industry conditions

Art.No. 0543.1



## **DIN EN/IEC 60335-1**

Build in products conforming to household appliance standard



his standard standardizes the safety of electrical appliances for household use and commercial purposes whose rated voltage does not exceed 250 V for single-phase appliances and 480 V for other appliances. In chapter 30: "Heat and fire resistance," the topic is discussed in more detail. Affected are parts of non-metallic materials, which keep live parts (e.g. connection elements) in their position. These must be resistant to ignition and the spread of fire. These fire-resistance requirements should prevent unattended devices from igniting themselves. On the market, this designation is called "No Flame." It applies for manufacturers of electric and electronic household components as well as for appliances in medium-sized operations.

#### Examples of affected appliance groups and areas of application:

### Home & garden

- Hot water heaters and hot water tanks
- Gas, oil and solid fuel appliances with electrical connections
- Room heaters, such as radiant heaters, electric stoves
- Electrically-operated heat pumps, air conditioners and room air dehumidifiers

# Appliances used outdoors

- Pumps
- Electric machines such as cigarette, beverage, candy, ticket vending machines

## Industry & trade

Circulation pumps for heating and process water systems

#### General

- Thermal storage heaters
- Air purification and treatment appliances, air humidifiers
- Fans













# No Flame

facts & data

ieland Electric GmbH is an experienced, expert partner in the area of pluggable electronic installations and connection technology. Service to the customer and the quality of our products are the highest maxim of our activities. As a company with a strong sense of responsibility, we see it as an obligation to our customers to point out the following:

Our connection systems and connection terminals stand for a simple, fast and safe installation. They have been type-tested and certified in accordance with the standards **IEC 61535**, **IEC 61984**, **IEC 60947-7...**, **DIN EN 60998** and **DIN EN 60999** and comply with the current state of standardization. This pertains to the classical pluggable electrical installation just as much as to the use as connection components in machines and other electrical devices.

For the use of connectors in operating equipment subject to **DIN EN 60335-1** ("Safety of household and similar electrical appliances"), Section 30, "Heat and fire resistance", must be referred to for evaluation of fire hazards. Especially for components used in appliances which are operated unattended and conduct a **current > 0.2 amperes** amperes during **normal operation**, according to Section 30.2.3 of this standard, there are more stringent conditions within the range of 3 millimeters around the live electrical parts.

Many of the parts in our catalog fulfill these requirements, either through the use of materials of fire class V-0 or V-1, or by verification of needle-flame testing according to **IEC 60695-11-5**. If there are additional, non-metallic materials within a defined cylindrical surrounding of 20 mm diameter and 50 mm height from the live connections, these components must also fulfill the above criteria. We would be happy to assist you with selection of the suitable catalog product.

As an alternative, we offer our customers a **specific order number group** for ordering "**No Flame**" products. This is not a release from the obligation of the standard, to evaluate the surroundings within a distance of 3 mm to the support of live parts.

#### **Example: Printed circuit board connector**

Standard part number
No Flame part number

25.320.0453.2 25.320.04**57**.2

For this purpose, we employ special plastics which have successfully undergone a glow wire test, either as test plates according to GWIT (Glow Wire Ignition Temperature) or as the component itself regarding GWT (Glow Wire Test). Corresponding VDE verification is available. Please note that not all colors of the standard product are available as "**No Flame**" material and in individual cases, color deviations may occur.

# eShop

earch online at Wieland and easily find what you're looking for! Use our sophisticated product selector to access 3D data, drawings and technical data sheets faster.



Use our product selector in the eShop and get to the right product in two steps.

Your pre-manufactured rail assembly with

# wieplan CLICK 2BUY

Design in CAE system

→ Interface to wieplan

product selection in wieplan

→ Simple, intuitive operation

product selection Documentation

→ Complete documentation, including 3D data Immediate pricing

→ Online ordering service

Express delivery service

→ in 5 workdays maximum

## www.wieplan.com





## Technical consultation

and general information







#### Use the Wieland hotline - a phone call is all it takes

## Industrial automation electromechanicals

Hotline +49 951 9324-991

E-mail AT.TS@wieland-electric.com

## Building and installation technology

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## 🗫 wieland



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contacts are green.