wieland

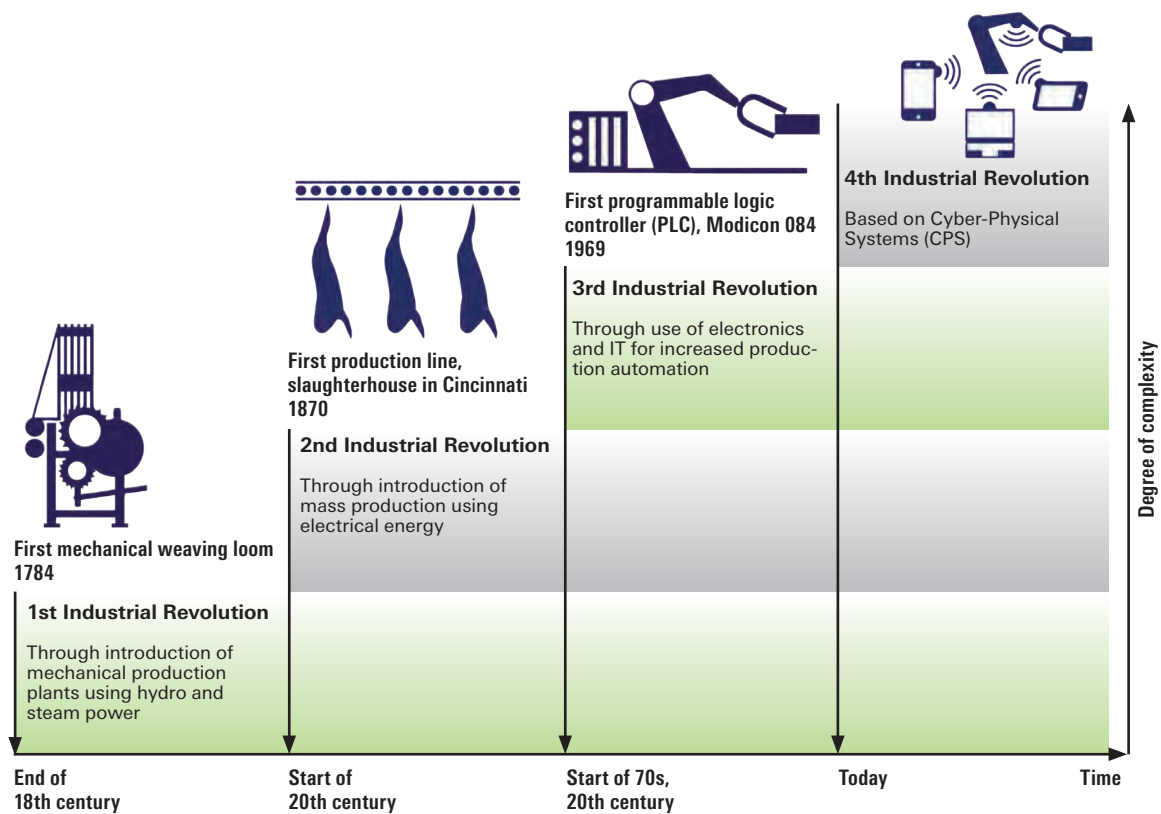# Innovations 2-2016

System solutions for
installation and automation technology

Industry 4.0
The four stages of industrial development

First programmable logic controller (PLC), Modicon 084 1969

4th Industrial Revolution

Based on Cyber-Physical Systems (CPS)

3rd Industrial Revolution

Through use of electronics and IT for increased production automation

First production line, slaughterhouse in Cincinnati 1870

2nd Industrial Revolution

Through introduction of mass production using electrical energy

First mechanical weaving loom 1784

1st Industrial Revolution

Through introduction of mechanical production plants using hydro and steam power

Degree of complexity

| End of 18th century | Start of 20th century | Start of 70s, 20th century | Today | Time |

On the way to intelligent and flexible production

The Internet of Things (IoT) is generally seen as the next stage of Internet development. Ultimately, this involves the direct communication of physical objects in the everyday milieu (e.g., household appliances, lamps, bicycles) or in the industrial production sector (e.g., machines, workpieces and products) with each other via Internet technology without the need for human intervention. Moreover, Internet-capable end devices and sensors such as smartphones or data glasses make humans a part of this network. In the industrial environment, one speaks of Industry 4.0, or the Industrial Internet of Things (IIoT). Today, about 30 billion devices are expected to be connected to the Internet by 2020.

In Industry 4.0, production meshes with ultra-modern information and communication technology. The driving force of this development is the rapidly increasing digitalization of the economy and society. Digitalization is permanently changing the way future production and processing are carried out in Germany: After steam machines, production lines, electronics and IT, now intelligent factories (the "smart factories") shape the fourth Industrial Revolution.

contacts are green.

Wieland Electric and Industry 4.0

W ieland Electric offers numerous opportunities to expand the appropriate infrastructure for realizing customer applications regarding Industry 4.0.

- Flexible installation concepts
  - Innovative and flexible energy distribution for modular production with the flat cable system *podis*®
  - Pluggable installation of energy and signals with the circular connector system *RST*®
  - Pluggable installation of sensors and actuators with the M8/M12 connector system *saris*®
- High availability, secure and fast communication solutions *wienet*
  - Ethernet switches
  - VPN network router (Internet access for LAN, WLAN or mobile radio)
  - VPN server for user-friendly VPN device management
- Secure power supply for the highest availability
  - Switching power supplies *wipos* PS1 and *wipos* PS3
  - Redundancy module *wipos* R20 for reliable parallel switching of your power supplies
  - Uninterruptible power supply *wipos* UPS
  - Overvoltage protector *wietap*
- Innovative safety controller *samos*®PRO COMPACT with Ethernet interface. Supports ProfiNet, ModbusTCP, EtherCAT and EthernetIP
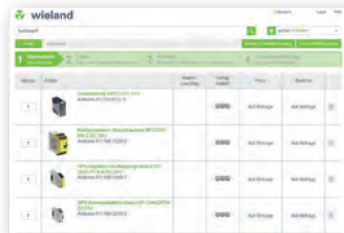

Remote maintenance

wieplan CLICK*2*BUY – Plan, assemble and order DIN rail terminals

We offer a comprehensive service portfolio to supplement our products. Our new planning tool *wieplan* CLICK*2*BUY for planning and configuring DIN rail terminals and our express assembly service for complete modules make working with Wieland terminals easier and create genuine added value.

Features
- Interface and data exchange with all current CAE systems
- Documentation in 2D and 3D formats
- Pricing and ordering online
- Express delivery service
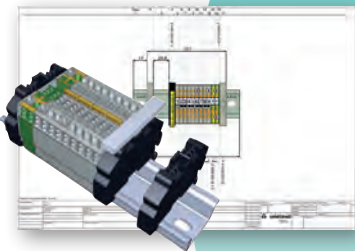
Express delivery service
➔ in 5 workdays maximum

5
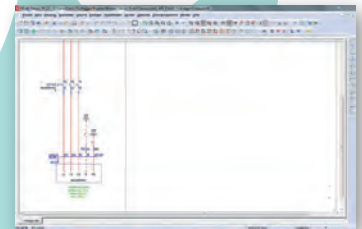
Immediate pricing
➔ Online ordering service

4

Documentation
➔ Complete documentation, including 3-D data

3

wieplan

2

1

Design in CAE system
➔ Interface to *wieplan*

Product selection in *wieplan*
➔ Simple, intuitive operation

NEW:
fasis **WTP**
with 'Smart
Push-In'

fasis WTP – DIN rail terminals with push-in connection

Would you like to plug in conductors easily, directly and without tools? *fasis* WTP – these are DIN rail terminals with the new, optimized push-in connection. With an effective overall concept, as well as compact construction type and high-performance contact technology, *fasis* WTP reduces installation time and storage to a minimum.

Features
- Tool-free push-in connection
- Easy to push in – reduced actuation forces
- Optimized portfolio – fewer terminal blocks – same functionality
- Integrated release lever

wieprint – the marking system from Wieland Electric

Individual marking thanks to Wieland's *wieprint* is a high-performance marking system with which you can professionally create labels, from individual marking tags to serial marking, for your terminal blocks. In addition, you can also print stickers, labels, or cable markings for all applications in the control cabinet.

Features
- Versatile – for marking of DIN rail terminal blocks, conductors and many other control cabinet components
- Thermal transfer print for high quality, durable marking
- High print speed – up to 8500 tags/hour
- Automatic operation, including magazine, possible

Information about these products:
0500.1 Catalog *selos/fasis*
DIN rail terminal blocks with screw, tension spring
and push-in connection technology
or at https://eshop.wieland-electric.com

5

samos®PRO COMPACT

The next generation of safety controls now offers even more functionalities in the smallest space.

Features

- Function blocks for presses
- Integrated Profinet IO protocol
- Integrated Ethernet/IP protocol
- Cover for the SD card slot as an accessory

POWER in SAFETY

SP-EN-ETC

The new EtherCAT gateway for security control, *samos*®PRO COMPACT.

Features

- EtherCAT, the industrial Ethernet protocol
- Bi-directional data transmission
- Transmission of up to 50 bytes of data
- Simple configuration via *samos*®PLAN 5+

POWER in SAFETY

STS – Safe Transponder Switch

The non-contact switches in the STS series are used for monitoring positions, at isolating protective devices for example, and offer maximum protection against manipulation through their coding function.

Features

- Maximum protection against manipulation
- IP67 / IP69K protection rating
- Cascading to PL e / Category 4
- Extremely compact design
- Switching distance of 8 mm / 10 mm
- Cable or M12 connection

Information about these products:
0860.1 *safety*
System solutions for automation technology
or at https://eshop.wieland-electric.com

wiecon **8142 ZP**

The new rising cage terminal with a pitch of 5 mm now offers even more advantages compared to conventional products on the market. A current-carrying capacity of 12 A, great reliability with the connection torque and an extremely large cross-sectional range are just a few of the many benefits that this new terminal offers. And it does so with tiny dimensions.

Features

- Best type of connection
- 20 % higher current-carrying capacity
- 50 % higher wire tightening torque – more reliable wire connection
- Extremely large cross-sectional range from 0.14 mm² to 2.5 mm² fine-stranded
- Tulip contact for optimum contact properties

RST®**POWER with** c**SP**us **approval**

RST® POWER connectors are not only inspected and approved by the VDE licensing agency according to DIN EN 61984, they are now also inspected and approved by the CSA testing laboratory according to the UL 1682 standard and parts of CSA C22.2. So, there is now nothing to prevent application in North America or in many other countries.

Features

- 4-pole and 5-pole connectors
- Up to 50 A and 400 V
- Compact and robust design and intuitive use
- According to UL 1682 and CSA C22.2 No. 0-10 & 182.1-182.13

RST®**CLASSIC with IEC Ex approval**

When we talk of potentially explosive areas, this immediately brings to mind the chemical industry or mining. But it is true that even in broad areas of the manufacturing industry, protecting against explosion is a major issue. Even carpentry businesses or large bakeries can be affected under certain circumstances. Anywhere where dangerously high concentrations of gas/air or dust/air mixtures arise, special measures need to be implemented to prevent explosions.

Features

- CE1258 ⟨Ex⟩ II 3G Ex ec IIC T6 Gc
- CE1258 ⟨Ex⟩ II 3D Ex tc IIIC T85 °C
- Dc IECEx SEV 15.0024 X
- SEV 07ATEX0110X

Information about these products:
0580.1 *wiecon*
Printed Circuit Board terminals and connectors
Overview

0690.1 *RST*®
Pluggable electrical installation
in highest protection (IP6X)
or at https://eshop.wieland-electric.com

RST® MINI **product line RST16i2/3**

Smallest installation connector with highest IP protection. With the new *RST*® MINI series, Wieland Electric creates a 3rd dimension of its successfully established *RST*® round connector system.

Features

• 16 A / 250/400 V
• IP66/68 (3m; 2h)/69K
• Newly developed TWISTLOCK locking technology
• 19.9 mm diameter (2 and 3-pole)

RST® MINI **product line RST16i4/5**

Smallest installation connector with highest IP protection. With the new *RST*® MINI series, Wieland Electric creates a 3rd dimension of its successfully established *RST*® round connector system.

Features

• 16 A / 250/400 V
• IP66/68 (3m; 2h)/69K
• Newly developed TWISTLOCK locking technology
• 24.9 mm diameter (4 and 5-pole)

RST® MINI **distribution terminal block 1I/2O for RST16i2/3 and RST16i4/5**

The smallest installation plug connector with the highest IP rating now with distributors for 2 to 5-pole variants.

Features

• 16 A / 250/400 V
• IP66/68 (3m; 2h)/69K
• Newly developed TWISTLOCK locking technology
• With multi-fastening plate

Information about these products:
0695.1 *RST*® MINI
   The smallest installation plug connector
   with the highest protection rating (IP6X)
or at https://eshop.wieland-electric.com

saris ® M8/M12 housing feed-throughs

The housing feed-throughs in the *saris* ® range make it very easy to plug together devices of any kind. This keeps the inside of the devices protected against handling as well as soiling.

Features
• Front and rear panel mounting
• With pre-assembled single conductors or shielded cable
• Molding provides protection against damp and other pollution

saris ® – M12 Power connectors

Thanks to powerful M12 Power connectors, energy can be supplied in the field safely with extreme ease. The very high power density of the M12 Power connectors guarantees ideal energy supply to your devices of up to 12 A.

Features
• No chance of mismating due to mechanical coding (S & T coded)
• Reliable power transmission up to 12 A
• Low electromagnetic load due to shielded cable

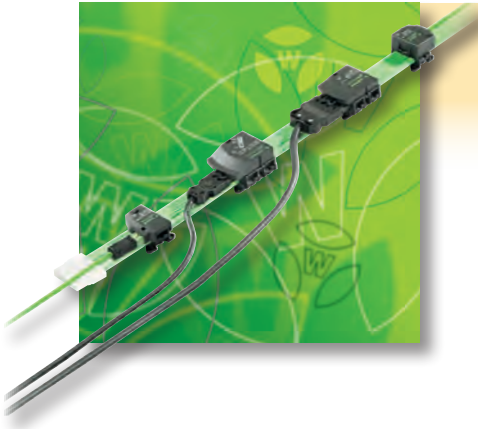## *saris* ® – 8-pole M12 connectors

In addition to the 3, 4 and 5-pole pre-assembled cables with M12 connectors already available, we now offer 8-pole cables as well to further complement the *saris* ® product portfolio. This means that devices with higher pole numbers can also be cabled simply, safely, and conveniently in the field.

Features
• With high-quality PUR cable
• Shielded as well as unshielded cables
• Safety thanks to 100% tested products

Information about these products:
0620.1 *saris* ®
Sensor/actuator wiring
M8/M12 and valve connectors
or at https://eshop.wieland-electric.com

gesis®NRG BASIC 5x2.5/4 mm² + 2x1.5 mm² **flat cable system**

Flat cable system for distribution of network and signals or network and KNX bus, IP 20 protection class, 5 x network 250/400 V, 20 A; 2x1.5 mm² KNX bus 50 V, 3 A, screened or 2x1.5mm² SIGNAL, 250 V, 6 A unscreened

Features
• Both cross-sections with identical exterior geometries
• All adapters mechanically coded, prevents voltage reversal
• Green: BASIC + KNX for application network + KNX black: BASIC + SIGNAL for application network + signal, such as SMI or DALI

gesis®NRG BASIC 5x2.5/4 mm² + 2x1.5 mm² **power supply modules for the flat cable system**

Flat cable system for the distribution of network and signals or network and KNX bus, adapter for power supply of network and signal/KNX separated

Features
• 2-pole power supply system up to 1.5 mm² parallel to the flat cable
• For network power supply, the familiar 5-pole power supply system is available
• Directly-integrated, robust pull relief
• Through-hole piercing connection with Torx® screws

Tap-off modules for the flat cable system *gesis*®NRG BASIC+, 5x2.5/4 mm² + 2x1.5 mm²

Flat cable system for the distribution of network and signals or network and KNX bus, adapter for tap-off of network and signal/KNX separated

Features
• 2-pole outlets for SIGNAL or KNX
• The familiar tap-offs are available for network tap-off
• Pluggable outputs parallel to flat cable
• GST15i2 female connector for SIGNAL or BST14i2 for KNX
• Through-hole piercing connection with Torx® screws

gesis®NRG Netz, 5x10 mm² **flat cable system**

5-pole flat cable system 250 V/400 V, 50 A, IP 20

Features
- Mechanical coding prevents voltage reversal
- Available in PVC and halogen-free

gesis®NRG Netz, 5x10 mm² **flat cable system**

5-pole power supply module 250 V/400 V, 50 A, IP 20

Features
- Power supply module for 5x10 mm² incl. pull relief
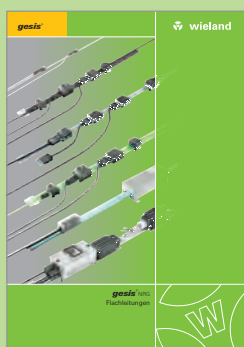- Housing cover protected against loss
- Screw connection

gesis®NRG Netz 5x10 mm², **flat cable system**

5-pole outlet module 250 V/400 V, 50 A, IP 20

Features
- Outlet module for 10 mm² flat cable with pull relief
- Simple mounting thanks to easy "push-in technology"
- Flat cable adapter pre-assembled available with circuit breaker
- Starting with circuit breaker, the installation is pluggable
- Piercing connection with Torx® screws

Information about these products:
0662.1 *gesis*®NRG
      Flat cables
or at https://eshop.wieland-electric.com

wieland

USA
Wieland Electric Inc.
North America
2889 Brighton Road
Oakville, Ontario L6H 6C9
Tel.   +1 905 8298414
Fax   +1 905 8298413
www.wielandinc.com

CANADA
Wieland Electric Inc.
North America
2889 Brighton Road
Oakville, Ontario L6H 6C9
Tel.   +1 905 8298414
Fax   +1 905 8298413
www.wieland-electric.ca

GREAT BRITAIN
Wieland Electric Ltd.
Riverside Business Centre,
Walnut Tree Close
GB-Guildford/Surrey GU14UG
Tel.   +44 1483 531213
Fax   +44 1483 505029
sales.uk@wieland-electric.com
www.wieland.co.uk

FRANCE
Wieland Electric SARL.
Le Cérame, Hall 6
47, avenue des Genottes
CS 48313,
95803 Cergy-Pontoise Cedex
Tel.   +33 1 30320707
Fax   +33 1 30320714
info.france@wieland-electric.com
www.wieland-electric.fr

SPAIN
Wieland Electric S.L.
C/ Maria Auxiliadora 2, bajos
E-08017 Barcelona
Tel.   +34 93 2523820
Fax   +34 93 2523825
ventas@wieland-electric.com
www.wieland-electric.es

ITALY
Wieland Electric S.r.l.
Via Edison, 209
I-20019 Settimo Milanese
Tel.   +39 02 48916357
Fax   +39 02 48920685
info.italy@wieland-electric.com
www.wieland-electric.it

BELGIUM & GD LUXEMBOURG
ATEM-Wieland Electric NV
Bedrijvenpark De Veert 4
B-2830 Willebroek
Phone   +32 3 8661800
Fax   +32 3 8661828
info.belgium@wieland-electric.com
www.wieland-electric.be

DENMARK
Wieland Electric A/S
Vallørækken 26
DK-4600 Køge
Tel.   +45 70 266635
Fax   +45 70 266637
sales.denmark@wieland-electric.com
www.wieland-electric.dk

SWITZERLAND
Wieland Electric AG
Harzachstrasse 2b
CH-8404 Winterthur
Tel.   +41 52 2352100
Fax   +41 52 2352119
info.swiss@wieland-electric.com
www.wieland-electric.ch

POLAND
Wieland Electric Sp. z o.o.
Św. Antoniego 8
62-080 Swadzim
Tel.   +48 61 2225400
Fax   +48 61 8407166
office@wieland-electric.pl
www.wieland-electric.pl

CHINA
Wieland Electric Trading
Unit 2703 International Soho City
889 Renmin Road,
Huang Pu District
PRC-Shanghai 200010
Tel.   +86 21 63555833
Fax   +86 21 63550090
info-shanghai@wieland-electric.com
www.wieland-electric.cn

JAPAN
Wieland Electric Co, Ltd.
Nisso No. 16 Bldg. 7F
3-8-8 Shin-Yokohama,
Kohoku-ku
Yokohama 222-0033
Tel.   +81 45 473 5085
Fax.   +81 45 470 5408
info-japan@wieland-electric.com

GERMANY
Headquarters
Wieland Electric GmbH
Brennerstraße 10 – 14
D-96052 Bamberg
Tel.   +49 951 9324-0
Fax   +49 951 9324-198
info@wieland-electric.com
www.wieland-electric.com

Sales Partner:
You can reach us worldwide in more than 70 countries.
Find the contact adress at: www.wieland-electric.com

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