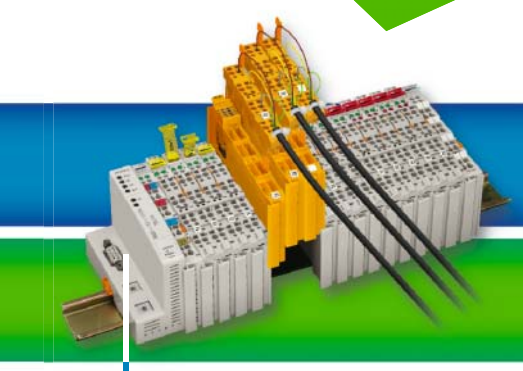
Electrical interconnections and electronics
1/2007
international

WAGO® direct



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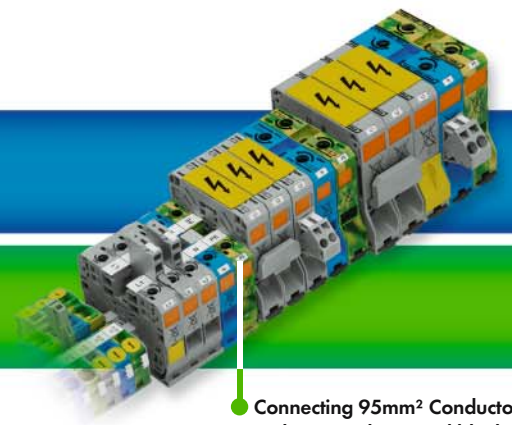

Connecting 95mm² Conductors with a Turn of the Hand
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Eliminating Potential Differences

Series 857: Isolation amplifiers, transducers and relay modules

The 857 Series of signal converters are the compelling choice because of their compact housings and industry proven electronics including safe 3-way isolation up to 2.5 kV and temperature range between -25°C and +70°C. They are the ideal solution for use in close proximity to machines in field applications.

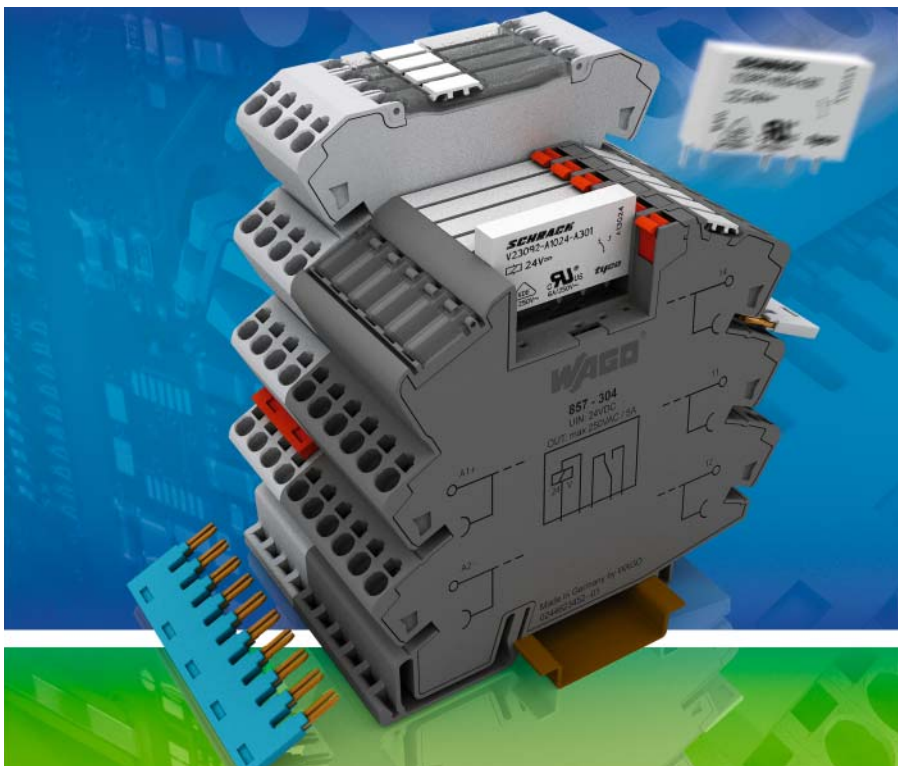
The WAGO 857 Series offers a full range of signal converters for all standard analog signals and serves as a reliable means to prevent both potential differences and ground loops. Furthermore, the products can also be used as protection against overvoltages.
The product range includes both preset and configurable isolation amplifiers, single and dual channel passive isolators, repeater power supplies (for HART applications), signal splitters with two galvanically isolated current outputs as well as temperature transducers for both PT 100 sensors and thermocouples.
Relay modules add to the range of transducers which have exactly the same outline.

Relays with input voltages from 12V to 230V are available with a large variety of switching powers and contact materials. Pluggable optocouplers and timer relays complete the range of products. If required, relays can be quickly and easily replaced from the top. There is no need to disturb the wiring or to remove the module.

Internal and external features

The 6mm wide modules of Series 857 not only have exactly the same outline, but a single in-line jumper can also be used to connect, e.g., the supply voltages to all

See page 6



Easy Does It

The end of the game is before the game: Preparations for the start of the Federal League after the World Cup

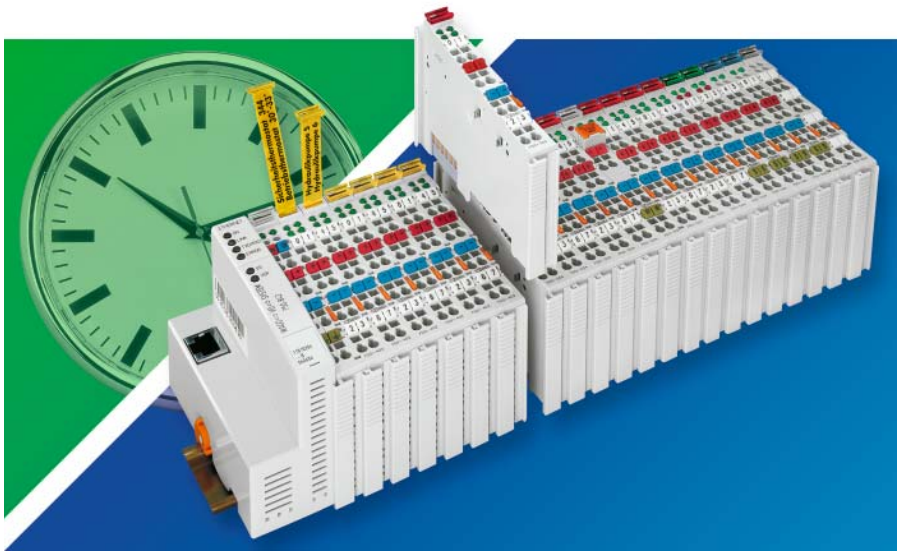
The "Clubbers", as the fans of 1. FC Nuremberg call themselves, have experienced many glorious victories in the Nuremberg easyCredit Stadium, but also many dark hours. However, the setting remains well lit thanks to the control equipment and the WAGO-I/O-SYSTEM. It provides every conceivable option from the manual control level directly at the node to HTML-based integration into the control and instrumentation system.

As part of the modernization required by the soccer World Cup, the stadium was also given a completely new lighting system. The four lighting masts alone provide the pitch with 1500 lux, sufficient to fulfill the FIFA standards. With the option to upgrade to 1800 lux, the Franconians are already prepared for the requirements of the HDTV age. In addition, the multi-function lighting for track and field athletics satisfies international competitive standards. Each mast has three independent power supply systems, two low-voltage supplies associated with the appropriate 20kV medium-voltage supplies, and the mains-replacement unit running in parallel with the supply network.
During the World Cup matches, the two main supplies were assigned to different 110 kV rings – a special technical supply feature, which requires close cooperation between the stadium management and the electricity supply authority.
In order to achieve maximum availability, the head engineer, Dipl.-Ing Klaus Kürzdörfer of Ebert Engineers, has placed stringent demands on the lighting control system: Reliable PLC-based control system, bus-compatible transmission using fiber-optic cable and manual control level directly at the place of installation. Furthermore, communicaten with the higher-level system and independent control from the building automation system were required. Inquiries for the system were freely placed throughout the EU; SAT Herbert GmbH made the running with a system based on the WAGO-I/O-SYSTEM. The plan was also well re-

See page 2

New Functions for the WAGO-I/O-SYSTEM

RTC- and 120 V-modules



Radio clock in the fieldbus node
Besides having to be real-time, knowing the real time is often important for various automation tasks. Accurate time-of-day information is now available for the WAGO-I/O-SYSTEM via radio signals. The RTC module 750-640 can be connected to any WAGO fieldbus node, providing the current time to the system. The time can be adjusted from a DCF77, WWVB or MSF signal. Connecting an external antenna to operate the RTC module is not absolutely necessary. In case of a power failure the time signal will be continued for up to six hours. Integrated clock timer functionality simplifies time-triggered operations for an external controller, as well as for a WAGO Programmable Fieldbus Controller. Available function blocks help to ease programming efforts. An elapsed time counter can also be realized. The new module is in stock and available for immediate delivery.

WHY WAGO

- Radio clock receiver in the fieldbus node
- Suitable for DCF77, WWVB and MSF signals
- Six-day buffer
- Built-in time switch function

High-density modules for AC control
Pack four inputs or outputs for 120VAC and 230VAC in a module width of only 12mm! The new WAGO 753 Series I/O modules for AC control are a highlight, especially for applications in the USA where inputs and outputs for AC voltage (120V!) are common. Fully compatible with the WAGO-I/O-SYSTEM 750, the new 4-channel input modules recognize voltages above 79VAC as "logic 1", which makes them suitable for 120V and 230V control signals. The 4-channel output modules provide the desired AC voltage as supplied by the I/O system's power supply modules. Pluggable connectors prevent user error when exchanging the modules. LED indicators make diagnostics easier to perform on site.

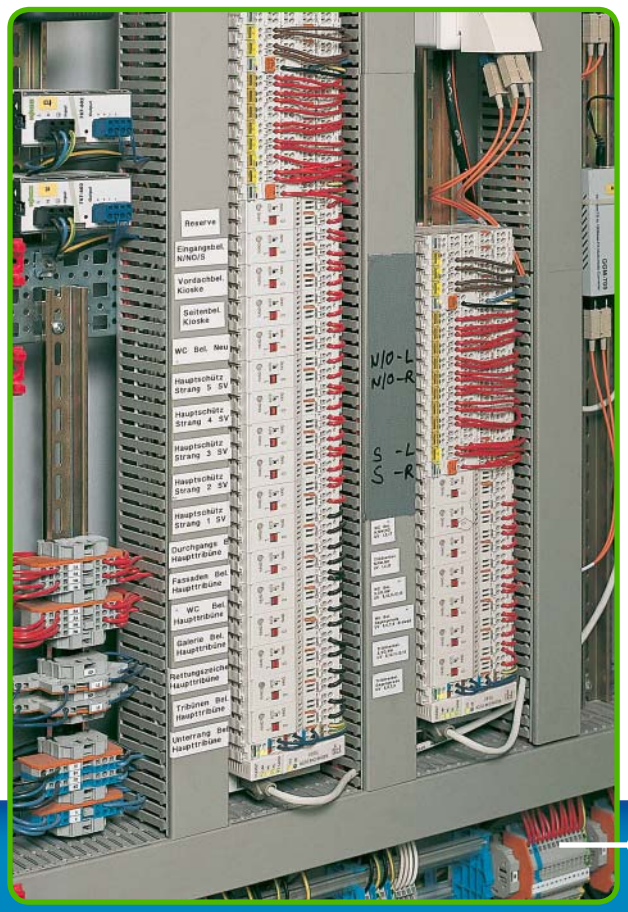
***MW* • More Information: WDI 1/2007-1**

WHY WAGO

- Direct control using 120/230VAC
  Four inputs and outputs maintaining a width of only 12mm
- Field and system levels are electrically isolated
- With pluggable connector
- Status LEDs

Easy Does It ***Continued from page 1***

ceived by the urban building surveyor's office. A total of fourteen fieldbus nodes, each with its own Ethernet controller, are in use in Nuremberg – one in each mast, eight for the arena illumination, and a master controller each for the masts and the remaining lighting. As a result of the decentrally distributed controllers, many local functions are still available even in the event of a data network failure.
Of particular interest are the different levels at which the control system can be accessed. In normal operation, the lighting is controlled via HTML pages, which are stored directly in the controllers and are merely uploaded to the GLT operator interface. All that is necessary for this is to call the IP address of the controller. With this trick, the GLT software with its otherwise quite proprietry design shows itself to be unusually open.
"By using the WAGO controllers, we are working with a pre-tested system that is simply added on. There is no need for time-consuming testing of innumerable interfaces", rejoices Project Manager Thorsten Mzyk of SAT Herbert. The technical service personnel can call up individual floodlights, defined groups, and above all pre-programmed scenarios for play, training and much more using the HTML pages. The controller technology keeps the lighting control independent; the HTML pages can be called up using any laptop. The reliable and convenient operator interface is thus available even if there is a fault with the GLT equipment.
The manual control level goes one step further. Instead of normal digital outputs, the SAT Herbert engineers have used WAGO 16A output modules, which can be switched manually. In the case of serious faults in the control system, the individual floodlights can be operated directly at the node, as with a normal light switch, without any additional components whatsoever. "For a big game, helpers can intervene directly at the foot of the mast when called upon to do so, without the control system having to be working", explains SAT Herbert programmer Jens Hitschfel. "But the manual control level is ingeniously easy for test purposes too."



As easy to use as a light switch. WAGO fieldbus nodes designed for manual control with Ethernet connection

Commissioning – more friendly than a nail-biter
The people of Nuremberg were able to look forward the World Cup in a relaxed manner, as the new floodlight system had already been commissioned by the start of the 2005 Confed Cup. Klaus Kürzdörfer takes stock: "Even the hardware concept is easy to commission. The combination of controller, inputs and outputs, and manual control level in one unit reduces the installation effort and thus also the sources of error. Everything went fairly smoothly, and the technical support people were present when required. The typical project difficulties did not arise. Even critical areas like the network management and the control of the hot-reignitable units were easy to program. Not even requests for changes at short notice presented a problem." SAT Herbert Managing Director Konrad Strauß adds: "There is a great deal of know-how that has been developed together with the support people in Minden, especially in the communication between the controllers. A follow-up project has already come out of this."
Millions of people were able to see for themselves on television that the World Cup matches in Nuremberg went off according to plan. Even when games were played during the day, the TV cameras naturally needed the floodlights. After five games without mishap, the "Club" was able to reclaim its home, and the stadium operators were able to enjoy high praise and positive feedback. ***MW***

The New Performance Class

WAGO = SPEEDWAY 767

WAGO is setting new boundaries in automation applications without control cabinets: WAGO-SPEEDWAY 767 is a system with perfection in every detail. The innovative remote I/O is perfectly designed to be mounted close to the machines especially in dry and humid industrial environments. It is programmable to IEC 61131-3, which means that it can also meet the requirements of function units that can be developed, manufactured and extended separately.

First models will be available by November 2007.

MW • More Information: WDI 1/2007-2

WHY WAGO

- Synchronous, highly accurate signal processing
- Short cycle times
- Integrated safety functionality
- Module and channel diagnostics
- Programmable and configurable
- Modular design
- Excellent EMC protection
- Effective power supply concept
- Temperature range from –25 °C to +60 °C
- IP67 degree of protection
- Fully encapsulated
- Screw and DIN rail mounting
- Ergonomic design
- Modules can be clipped together
- Innovative marking system (strips, cards)
- Sealable operation panel
- Standard connection technology
- Silicon and halogen free materials

Profisafe: High Performance in the Smallest Spaces Possible

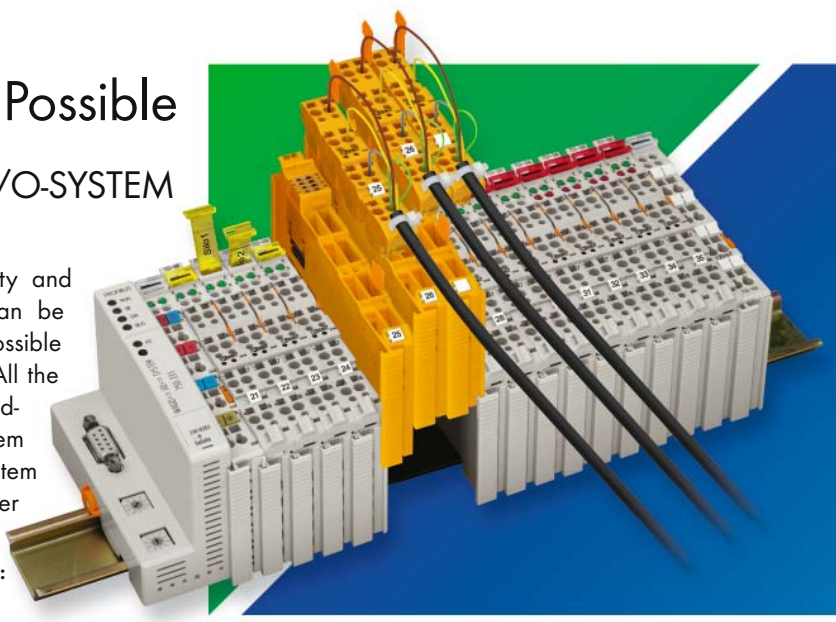
Configurable components expand the range of Profisafe modules for WAGO-I/O-SYSTEM

More performance than ever: A 4-channel input module (24V, Item No. 753-661) and a 4/4-channel input/output module (24V / 2A, Item No. 753-667) add to the WAGO-I/O-SYSTEM. Both modules meet the requirements of Category 4, SIL3 and Performance Level e. Highlight is the configurability using the I/O-Check software: This way, discrepancy and filter times, test pulse lengths and much more can be adjusted for different types of sensors and actuators. Pluggable wiring connectors allow the modules to be exchanged without disturbing the existing wiring. Safety and standard modules can be combined in any possible way within a node. All the benefits of both fieldbus-based safety system and modular I/O system are provided to the user at the same time.

WHY WAGO

- Safety equipment in the smallest spaces possible
  Combination of safety and standard modules within a node
- Configuration using the I/O-Check software

***MW* • More Information: WDI 1/2007-3**



Ethernet Onshore and Offshore

Once more, the WAGO-I/O-SYSTEM 750 scores with approvals for marine applications

The WAGO-I/O-SYSTEM 750 increases its lead in ship building. The 750-841 Series Ethernet Controller has received the ABS (American Bureau of Shipping) Type Approval which is the entry ticket to the US market. The programmable controller is not only suitable for local sub-functions. The processor performance is sufficient even for standalone self contained control units, which in turn can communicate with an existing IT infrastructure via Ethernet. The possibilities that will open up in ship building as well as onshore/offshore applications can hardly be imagined.

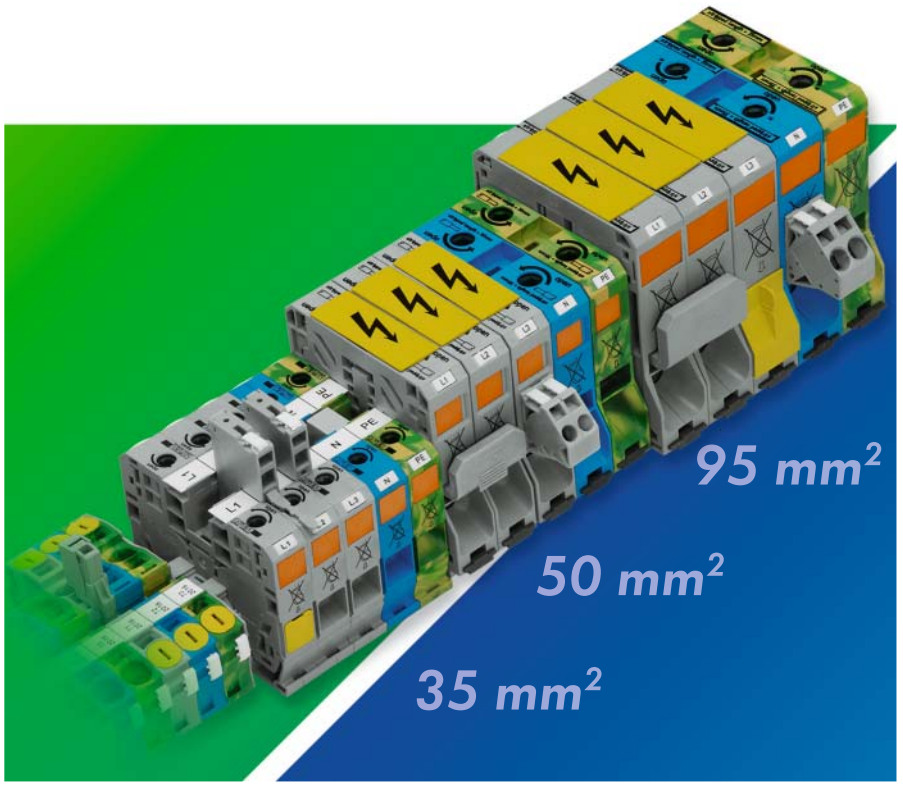
As announced in the last edition of "WAGO direct", NKK (Nip pon Kaiji Kyoka) for the Japanese market and "Korean Register" have also been granted, which will open up new markets. "Korea Register" is very important not only in Southeast Asia, but also in New Zealand and Australia. In a mostly international operating field like marine applications this is an important competitive advantage for all WAGO customers.

***MW* • More Information: WDI 1/2007-4**

Connecting 95mm² Conductors with a Turn of the Hand

Rail mounted terminal blocks rated 35mm², 50mm² and 95mm²

NEW



They are precise and safe, fast and convenient, and they accept all types of wires from 6mm² to 95mm² (AWG 4 to 4/0) – which is superior to any other comparable terminal block on the market. The three versions of the 285 Series rail-mounted terminal blocks are suitable for applications with rated currents up to 232A. Based on a unique patented technology, the largest version has been holding its ground in the market for many years. Now, two additional terminal blocks for wire sizes down have been added to the range.

Permanent integration of torque wrench function

The larger the cable size, the more critical it is to clamp with the proper contact pressure. Therefore, even the most qualified electricians have to resort to a torque wrench. This time consuming process can be avoided using WAGO terminal blocks where each wire, whether solid, stranded or flexible, ferruled or unferruled, is automatically clamped by the WAGO CAGE CLAMP® or WAGO POWER CLAMP with the appropriate force throughout the entire cross section range. The force is selected so that the cable is clamped precisely, without causing any cold flow deformations of the copper wires or other damaging effects. But the spring can do even more. It compensates wire deformations over the entire lifetime of the terminal block and in addition is insensitive to temperature variations, vibrations and other types of shocks. For the Series 285, WAGO has developed a variant of the CAGE CLAMP®, the WAGO POWER CLAMP which is designed to connect larger cable sizes.

Fast and safe connection

All three 285 Series terminal blocks are suitable for side entry wiring. This means that, even larger cables, which are flexible to a limited degree, can be connected without a problem. The latching mechanism, a special feature that makes it even easier to connect the cable, holds the clamping system of the terminal blocks open and gives the installer both hands free to insert the conductor. This really makes life easier when connecting 95mm² cables. All that is required to open the clamping mechanism of the terminal blocks is a standard hex wrench or a screwdriver when using the smallest version of the terminal block.

Little Extras – Large Benefits

A voltage tap is available that can be fitted into the jumper contact slot of all three 285 Series terminal blocks. Using this smart accessory, the supply voltage for lighting and service connections can be tapped without the need for any additional terminal blocks, when the main switch behind the power supply terminal blocks is opened. The voltage tap can also be used instead of a 4mm test socket when measuring devices are connected permanently (e.g. battery voltage of a stand-by set).

Additional accessories such as jumpers (which are, of course, capable of carrying the full rated current), protective warning markers, marking systems, etc., are available for all 285 Series terminal blocks.

***MW* • More Information: WDI 1/2007-5**

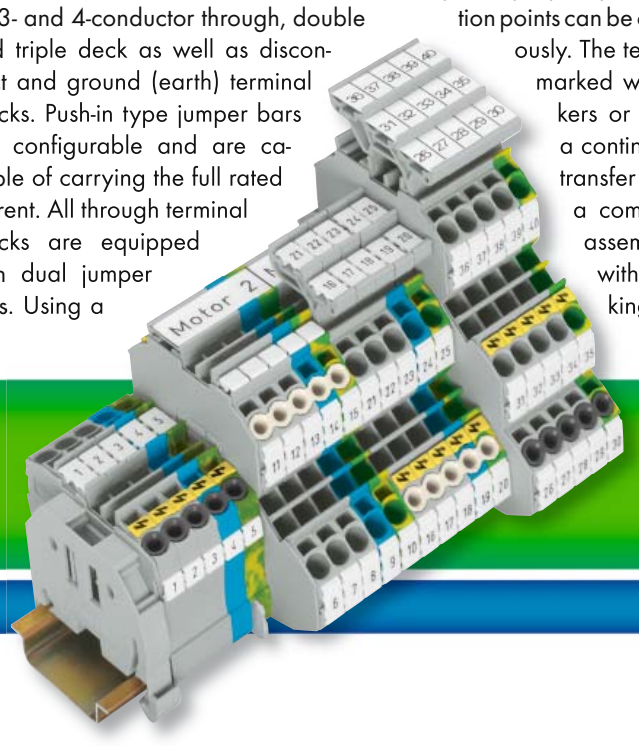
WAGO 285 Series rail-mounted terminal blocks: Connection with a turn of the hand

WHY WAGO

- Screwless connection up to 95mm²
- Convenient wiring of larger cables
- User-friendly accessories

The TOPJOB®S Rail Mounted Terminal Block Range for Efficient Electrical Installation Applications

Whether for industrial or building installation applications, the new TOPJOB® S terminal blocks reduce installation time and save space in junction boxes and distribution panels. Using the CAGE CLAMP® S connection technology, terminal blocks are up to 30% smaller than comparable products. This technology is suitable for all types of wires from 0.25mm² to 16mm² (or 25mm² "f-st"); solid wires and flexible conductors with ferrules can be simply pushed in. The TOPJOB® S series consists of 2-, 3- and 4-conductor through, double and triple deck as well as disconnect and ground (earth) terminal blocks. Push-in type jumper bars are configurable and are capable of carrying the full rated current. All through terminal blocks are equipped with dual jumper slots. Using a special jumper system, up to four connection points can be commoned simultaneously. The terminal blocks can be marked with WMB Inline markers or the new markers on a continuous reel for thermal transfer printer. As a result, a complete terminal block assembly can be marked with one universal marking strip.



WHY WAGO

- Space saving of up to 30%!
- Suitable for all conductor types between 0.25mm² – 16mm²
- Configurable jumpers capable of carrying the full rated current
- Innovative marking options

***RKK* • More Information: WDI 1/2007-6**

Color coding for easier identification: *WINSTA®* connectors for special applications

WINSTA® in Coded Colors

Color coded connectors for easy identification of circuits

WINSTA® is the connector system for perfect building installations. *WINSTA®* offers maximum time savings, flexibility and maximum safety. The *WINSTA®* product families MINI, MIDI, MAXI, IDC, RD and EIB meet all current building installation requirements, no matter whether you want to install cable in false ceilings, wire in conduit, or run a bus cable. The user can choose freely between cable assemblies for standard connection applications and individual components for custom installations.

Color coding for easy identification

In the beginning, *WINSTA®* was exclusively black and white: Black was used for standard connectors and white mainly for lighting connectors. In the meantime, connectors in red, green, orange, blue and brown have been added to the standard black and white versions. In contrast to the interchangeable black and white components, the colored versions each have individually coded mating connections. This makes them perfectly suited for circuits, where correct connection is critical, such as UPS circuits for IT applications, or bus lines.

With *WINSTA®*, these circuits can be identified at a glance by color, and are protected against incorrect connection by the coded mating system.

***MW* • More Information: WDI 1/2007-7**

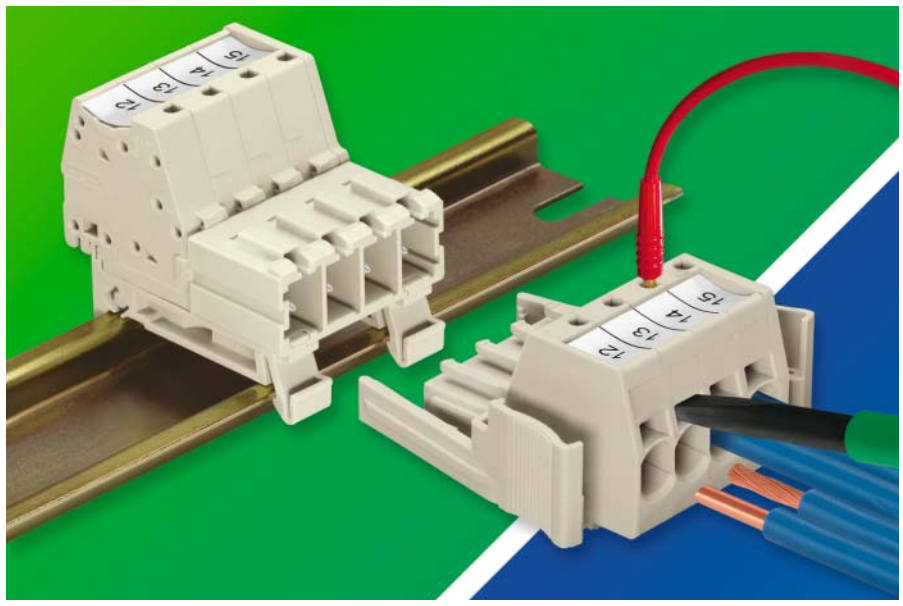
The MAXI-mal Solution

PCB connectors for 41A applications

The high current specialists from the WAGO *MULTI CONNECTION SYSTEM* range of PCB connectors can cope with up to 41A. This means that subassemblies for high power applications (e.g. converters or power supply units) can be designed as pluggable PCB modules.

The 2- to 8-pole terminal blocks are equipped with CAGE CLAMP®S connection for wire sizes up to 6mm² (insulated ferrules) or 10mm² (flexible); pin spacing is 7.62mm. Headers with straight and right angle solder pins are available in 2- and 3-pin versions (the 2-pin version is layout compatible to all systems currently available on the market). In addition to standard PCB applications, a DIN rail mounting option is also available, which makes installation in switch cabinets easier.

Many useful features, including 100% protection against mismating, individual coding options, separate test slots, optional locking levers as well as printing and marking using marker strips complete the product presentation.



***MW* • More Information: WDI 1/2007-8**

WHY WAGO

- 2- to 8-pole male and female connectors, rated up to 41A
- Mounting on both PCB and DIN 35 rail
- CAGE CLAMP®S connection

Industrially Proven Ethernet Connection

Interface modules for RJ45 connectors

These interface modules break it down with improvised solutions for industrial Ethernet connection applications in the switch cabinet. The modules combine industrially proven RJ45 connectors with CAGE CLAMP® connection technology for the clear arrangement of individual wires.

Shield (screen) connection is provided by a WAGO shield (screen) clamping saddle. The mounting carrier is suitable for DIN 35 rails. The Y-Con-Jack-22 connectors from Yamaichi are based on RJ-45 technology and are equipped with additional contacts for power supply, with the benefit that the power supply is integrated into the Ethernet network. An additional interface with two Y-Con-Jack-22 connectors complete the range of products.

***MW* • More Information: WDI 1/2007-9**

WHY WAGO

- Industrially proven Ethernet connection with standard RJ45 and Y-Con-Jack-22 connectors
- Suitable for up to 100 Mbps – CAT 5, CAGE CLAMP® connection
- CAGE CLAMP® connection technology for wire sizes from 0.08mm² to 1.5mm²
- Convenient shield (screen) connection
- Partially equipped with integrated contact for power supply

PCB Terminal Blocks for Power Electronic Applications

True 600 V to UL 1059 at only 7.5 mm pin spacing

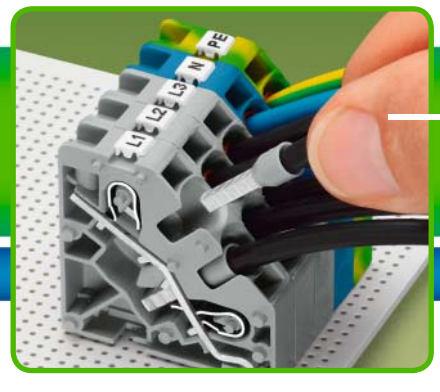
The new 746 Series PCB terminal blocks from WAGO are ideal for use as field connection terminal blocks in power electronic applications (e.g. drives). Staggered solder pins provide the 746 Series with a rated voltage of "true" 600V to UL 1059 (i.e. full rated current) for only 7.5mm pin spacing. Two connections per pole allow potentials to be multiplied without additional terminal blocks, jumpers or a particular PCB layout. The CAGE CLAMP®S connection technology is suitable for all types of wires; solid wires and flexible wires with ferrules can be simply pushed in. Poles are marked using snap-in markers or by direct printing.

EExi versions with blue insulation are also available.

***MW* • More Information: WDI 1/2007-10**

WHY WAGO

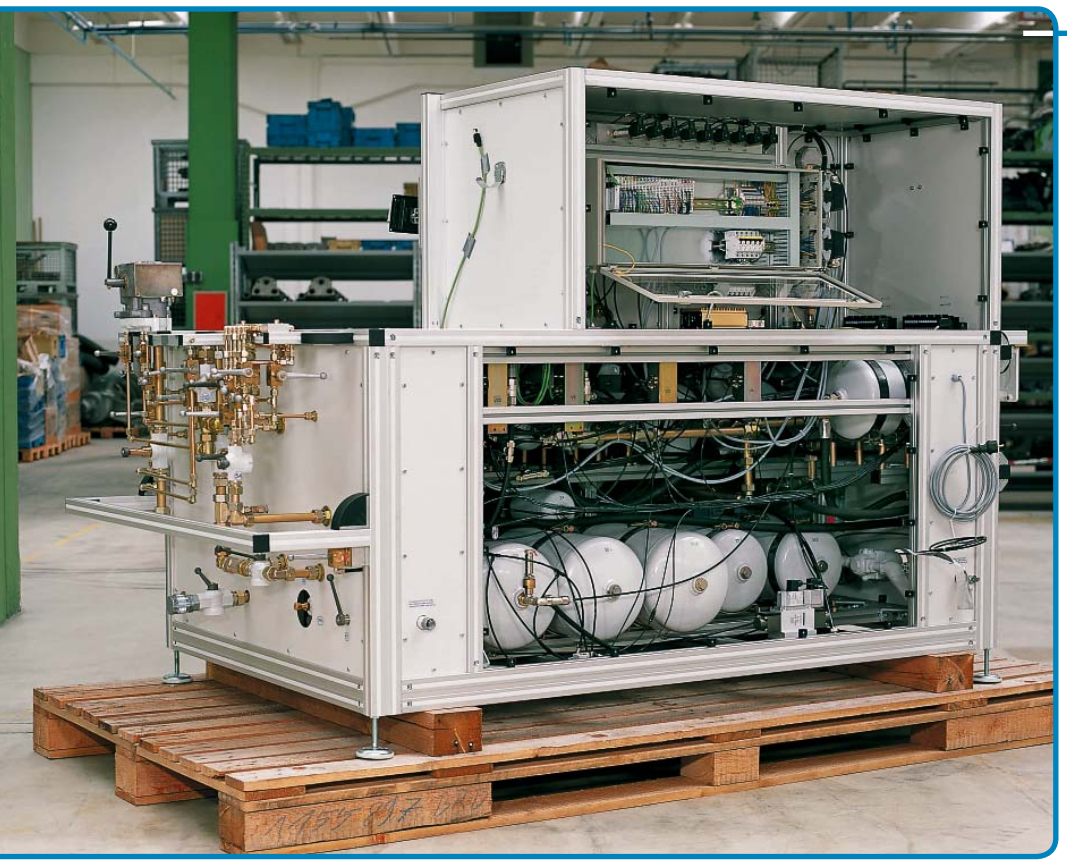
- 600V to UL 1059, 40A at only 7.5mm pin spacing
- Two connections for the direct looping of wires
- CAGE CLAMP®S with push-in connection technology



PCB terminal blocks, Series 746, with push-in connection technology

Testing Brakes, Keeping Costs under Control

WAGO-I/O-SYSTEM in pneumatic brake test systems



Ready for delivery: A Knorr-Bremse test system to be used directly by the customer. A WAGO fieldbus node is installed in the left side of the control cabinet

They must be affordable, must be easy to maintain and suitable for worldwide use – and guarantee absolutely reliable results. Brake test systems from Knorr-Bremse have to meet many requirements. This is made possible using the WAGO-I/O-SYSTEM which not only allows the integration of pneumatic valve manifolds, but also the communication with Labview test software. Valve installation and wiring costs can be significantly reduced through integration into the I/O environment.

The Knorr-Bremse Group is a worldwide leading manufacturer of pneumatic braking systems for rail and commercial vehicles. Test systems are delivered by Knorr together with the brakes for integration into the operator's vehicle maintenance system. Jörg Koch, who heads the development of production and customer test systems at Knorr-Bremse, explains: "Customer test units must be easy to maintain, easy to operate and self-explanatory so that they are accepted by customers

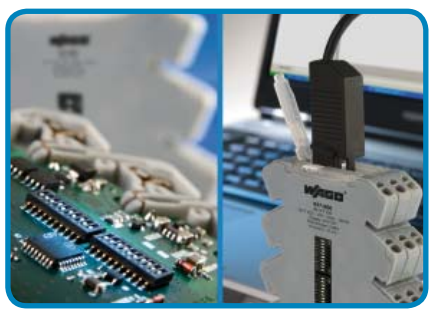
Koch uses the WAGO-I/O-SYSTEM to reduce costs in many ways. In addition to its modular design, the WAGO system also offers a large number of open interfaces to the components of third party manufacturers. Particularly striking are the pneumatic valve manifolds from Bürkert which can be integrated into the WAGO fieldbus nodes just like any other I/O modules, so that installation and wiring costs can be drastically reduced.
A second interface allows for the direct connection between the I/O system and the Labview development environment from National Instruments. Labview aids in collecting and processing measured data in production automation or a lab environment. Special Ethernet drivers, that have been specifically developed by Jörg Koch for this application, enable the direct communication between the WAGO-I/O-SYSTEM and Labview via TCP/IP (Modbus protocol). OPC servers or the like are not required. The drivers are available on the WAGO website under Downloads/Application Notes.
During the test procedure, many fast processes must be monitored (e.g. increase in pressure or synchronous behavior of pressure switches and pressure flow), which requires cycle times up to maximum 25ms. No problem for WAGO. Assuming a peer-to-peer connection to the PC, cycle times of about 7ms can be achieved for the whole process by a node containing more than 40 I/O modules. Jörg Koch: "A great deal of money can be saved with WAGO without having to compromise performance. The system is very compact and allows us to operate up to 64 modules per coupler, allowing for additional resources." ***MW***

Detail view: WAGO Ethernet fieldbus coupler connected to Bürkert pneumatic valve manifold

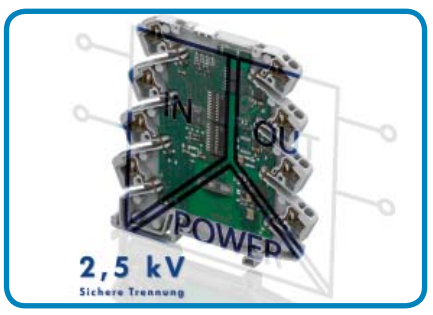
Eliminating Potential Differences

Continued from page 1

modules. This means simple commoning, not complex discrete wiring. The lower profile relay modules match the outline perfectly.
Due to the wide range of application possibilities, the highest quality requirements had to be set. The permissible ambient temperature ranges from –25°C to +70°C (using relays, this range depends on the continuous current), which currently is a unique temperature rating



Configuration via DIP switch or software

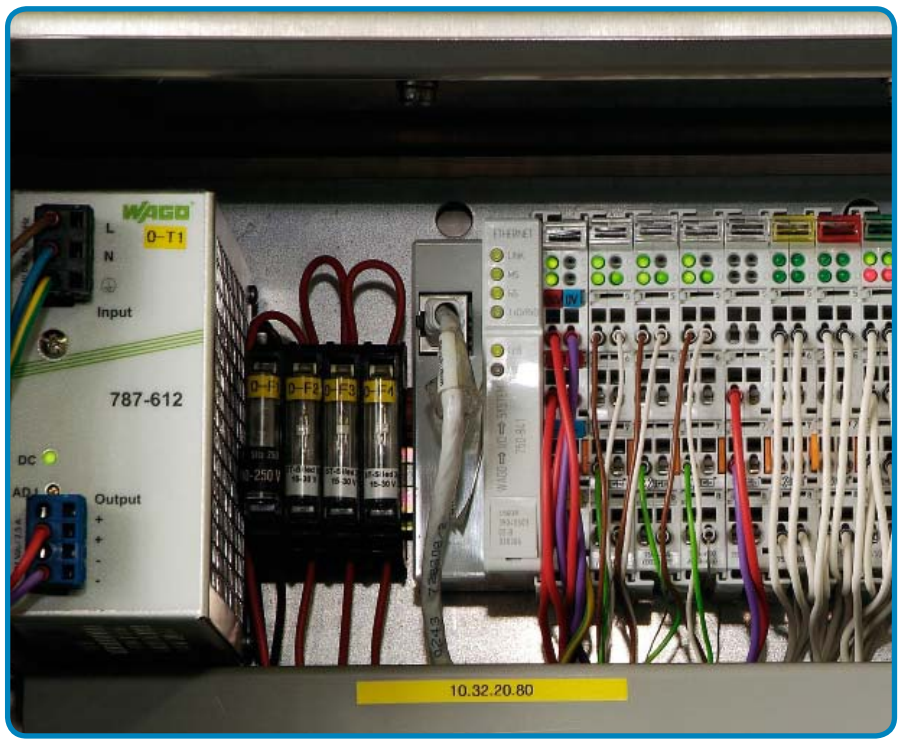


Safe isolation up to 2.5kV

for transducers. All devices provide safe isolation of input, output and supply circuits with 2.5kV test voltage to EN 61140. The transmission error of the measured data remains below 0.1%.
The product range is in stock and available for immediate delivery

MW **• More Information: WDI 1/2007-11**

Portable Data Logger Makes Process Analysis Easier



Reproducible processes are necessary so that a constant level of quality can be guaranteed and even improved. This requires that the process data be documented, recorded and analyzed. However, data collection is often performed manually, which is time and cost consuming. Therefore, Henkel Technologies has developed a data logger, which, in combination with the WAGO I/O System, can record, archive and analyze pH values, runtimes, temperatures and other process data. Equipped with an Ethernet controller, the data logger can be integrated into the existing network in a cost-effective way. This way, data can be accessed from any computer almost at the press of a button.

Mention the old-established German company Henkel KGaA and most people think about detergents, cosmetics and adhesives. However, besides those products, the Henkel Technologies division is also supplying surface treatments to industrial customers. Furthermore, process management systems are being developed, which include metering, control and logging modules.

Portable data logger records process data

In many processes, such as in pretreatment applications, quality assurance requires that all process values be logged. This means that costly and time-consuming recording and archiving procedures are required, since the values are often collected from a fixed measuring device or from the laboratory environment. This is why Henkel Technologies has developed a data logger suited for recording and transmitting both operating and error messages as well as consumption and fill level values. Furthermore, pretreatment installations can be controlled and orders automatically generated via ERP system using the logger. "Customer quality assurance is also gaining importance in small and medium-sized companies. Here, with the data logger, we offer a competitively priced, forgery-proof and particularly user-friendly way of operation in addtition to our chemical products", reports Frank Krude, TTA Engineering division, at Henkel KGaA.

In addition, the data logger should be portable so that cable routing and space requirements can be kept as low as possible. It should also be suited for other industrial environments. Henkel Technologies decided to go for the WAGO-I/O-System 750, which offers a wide range of possibilities using different controllers. This way, the data logger is open to various user interfaces, it is easily extendable and can be integrated into existing systems with minimum installation effort. It can also be used as a stand alone module or as an extension to existing measurement systems (e.g. Lineguard 96©). Furthermore, it can be integrated into existing customer installations.

Using the data logger, the following types of signals can be recorded: standard signals (0/4-20mA or 0-10V), temperatures via PT 100 or thermocouples, digital signals as input/output states as well as values from other measurement systems via RS 232 interface. Values measured by a portable measurement system or quantitative data from metering systems can also be logged. Altogether, up to 32 values or states (up to 1000 values in future) can be saved as a CSV file and imported into Excel. The data can be stored on standard CompactFlash (CF) cards with maximum 1 GB memory, which provides data logging capacity of eight years.

Ethernet controller for higher consistency

Henkel Technologies relies on the most consistent interfaces possible as well as on existing network structures. This is why Henkel chose to opt for the 841 Series Ethernet Controller from WAGO. Used as series controllers in Henkel's production environment, the WAGO controllers transmit the process data via Ethernet interface over the existing network. This way, the process data can be accessed from any location. Furthermore, the process data can be viewed by authorized users from any computer within the network. Stations that cannot be reached via the network or servicing personnel can be linked using standard W-LAN products. Over longer distances, information to the servicing or maintenance personnel can be sent via mobile phone using an optional GSM modem built into the data logger.

Controller programmable to IEC 61131-3

The data logger not only collects the process data, but also controls and regulates the pretreatment installation. Furthermore, it can independently generate an order to the supplier when the fill level values are too low. Within the controller, these functions are programmed in compliance with IEC 61131-3 using CoDeSys V2.3 depending on the customer's requirements. The functionality of a soft PLC is therefore provided by the controller.

The WAGO 750-841 Ethernet controller used at Henkel is based on a 32-bit multitasking CPU with buffered real-time clock. For programming in accordance with IEC 61131-3, the controller has 512 KB program memory, 128 KB data memory and 24 KB retentive memory. It supports different application protocols such as MODBUS and Ethernet/IP to control the signals from the I/O modules, as well as HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP for system managing and diagnostics. The process data is transmitted over 10 Mbit/s or 100 Mbit/s LAN link (Local Area Network).

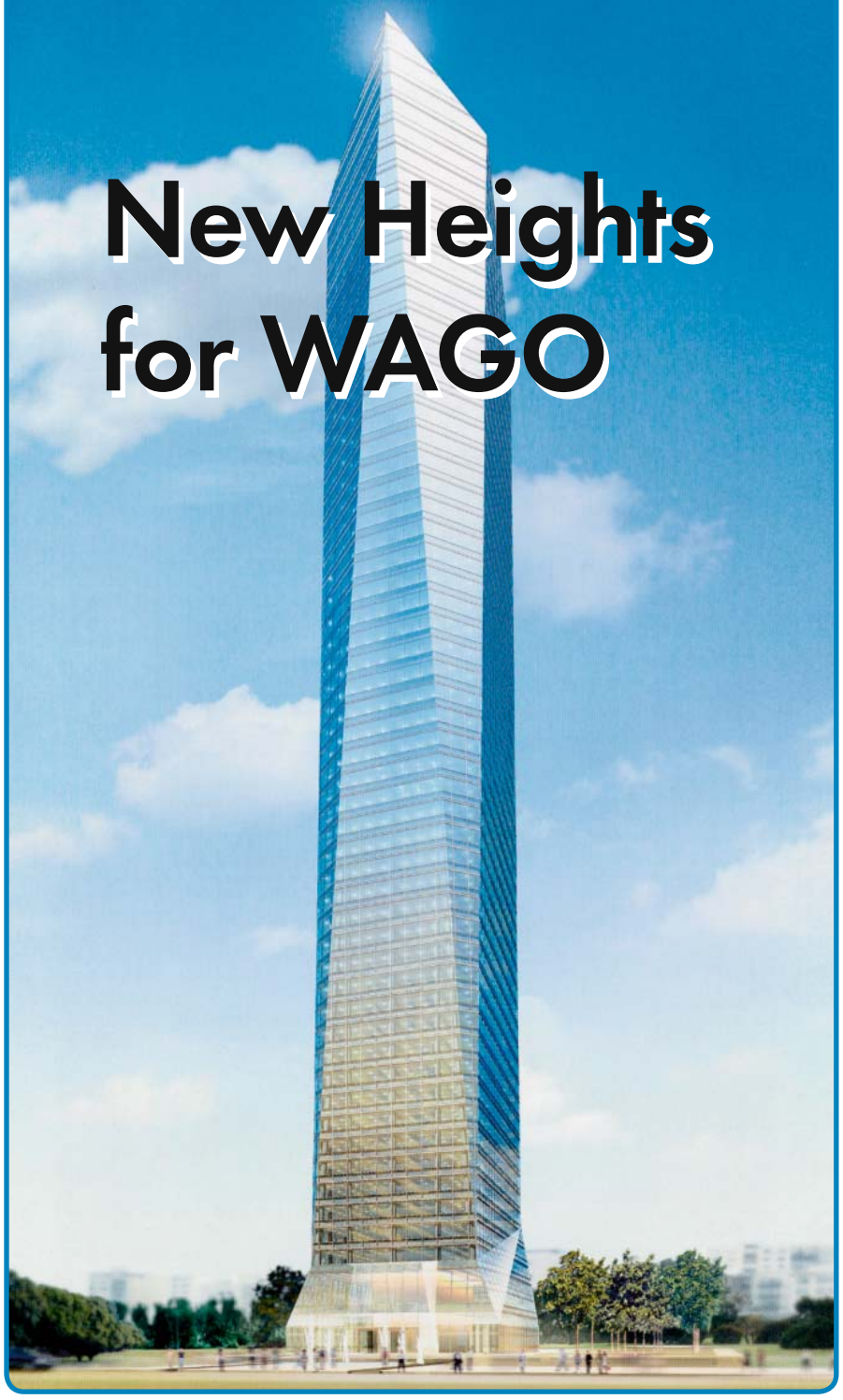
Convenient operation using WebVisu

The WAGO Controller 841 has a built-in web server on which the configuration web site is located. The data logger can be conveniently operated and configured via web page navigation. A PC or laptop with a browser is all that is required to access the configuration web site. The measured values can be transmitted on site by the user via a Wireless LAN enabled notebook or PDA. Furthermore, the process data can also be accessed from a W-LAN hotspot.

Conclusion:

Henkel Technologies has made automatic recording and archiving of process data possible with a data logger based on the WAGO-I/O-System. Using the smart IEC 61131-3 programmable controller, the data logger is also suitable for the control and regulation of pretreatment installations. Equipped with an Ethernet interface, the data logger can be integrated into the existing LAN environment, which allows process data to be accessed from any location within the company's network. Using the data logger, processes are made more transparent, making quality assurance even easier to achieve. ***RKK***

New Heights for WAGO



The set of 4 skyscrapers, located on the site of the former Real Madrid Sports area, will become the new downtown business centre of Madrid. WAGO will supply materials for installation on two of the buildings, still under construction, Torre de Cristal and Torre Repsol. These buildings will become the tallest in the capital and the country. Designed by the famous Argentine architect César Pelli, the Torre de Cristal will be 250 meters tall, and will have 52 floors and a carved diamond exterior design. It will become the new symbol of the city. Energy conservation and occupant comfort have been important considerations in the building's design. The tower's glass skin is a „bioclimatic wall" with double-glazing on the exterior and operable windows on the interior.
WINSTA® preassembled cables are installed under-floor and in the ceiling voids of every office floor. All the lighting and socket outlets are including the *WINSTA®* snap-in connectors. The cable specification used complies with the Spanish law for public attendance buildings, requiring 0.6/1KV, V0 and halogen free cable. Also the 222-413 and 222-415 are used for the service floors and car park lighting junction boxes.
Torre Repsol will be the tallest building in the country measuring more than 250 meters high and will have 45 floors. Designed by the prestigious architect Norman Foster, the tower will be the World Headquarters of Repsol. The WAGO 222 Series is used for all the electrical interconnections in junction boxes inside the building. The installation company decided to use them because of their quick and easy installation, the flexibility in the type of cable that can be used and 100% reliability record of the CAGE CLAMP®. The client approved the use of them, mainly because of the WAGO CCC safe performance record and the fact that one made the connections are maintenance free.

Álvaro Mallol, General Manager
WAGO-DICOMAT Spain

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WAGO Kontakttechnik GmbH & Co. KG
P.O. Box 2880
32385 Minden
Fon (05 71)8 87-0
Fax (05 71)8 87-1 69
info@wago.com
www.wago.com

Editor:
Martin Witzsch, MW (Editor-in-chief)
Fon + 49 (0)571/887-448
Fax + 49(05 71)8 87-3 05
martin.witzsch@wago.com

Renate Klebe-Klingemann, RKK
Fon (05 71) 8 87-418
renate.klebe-klingemann@wago.com

Guest contributor:
Álvaro Mallol, General Manager
WAGO-DICOMAT Spain

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WAGOdirect international 1/2007 • P. O. Box 2880 • D-32385 Minden/Germany
Phone ++495 71/8 87-0 • Fax ++495 71/8 87-3 07