

# WINSTA® wiring systems for buildings



**For high speed,  
totally secure  
electrical  
installations**



**WAGO®**  
INNOVATIVE CONNECTIONS

# WINSTA® – the perfect choice



WINSTA® modular plug and play connectors from WAGO can reduce wiring time by up to 70%. They are suitable for power, lighting and control applications in both fixed and temporary electrical installations and are ideal for ceiling, underfloor and trunking systems.

WAGO is also able to purpose-design a distribution/ junction box to fit any application – selecting the right components and making up the most suitable enclosure for the task.

As the range has expanded, so has the reputation of these innovative and high performance products. In the UK and around the world, leading lighting manufacturers pre-fit WINSTA® sockets to their luminaires to ensure a fully pluggable installation end to end. What's more, WINSTA® is used in some of the world's largest and most high profile building projects.



**Floor distribution boxes**



**Cable ducts**



**Lighting**



WINSTA® wiring solutions really are the perfect choice for electrical installation in today's fast-moving building services industry. If you want high speed, totally secure 'fit and forget' connections, they provide a package that is hard to beat.

# A uniquely versatile range



**WINSTA® MINI** – the small connector that's big on power. The 250V, 16A rating means that MINI can be used for many lighting and switching applications as well as being ideal where space is limited.



**WINSTA® MAXI** – is rated at 32A to provide a power supply to distribution boxes with high demand loads such as lighting. The 6mm<sup>2</sup> cable rating ensures that voltage drop over the cable length is minimised.



**WINSTA® MIDI** – the all-rounder for building installation, lighting and exhibition applications. With a rating of 400V, 25A MIDI is also suitable for marine, rail and motorhomes too.



**WINSTA® IDC** – This provides the highest degree of flexibility by mating the MIDI connectors with a tap off system that allows connection anywhere on the flat cable, saving time and costs in planning and installation.



**WINSTA® EIB** – bringing the standardised EIB bus onto a project with the reliability of the WAGO connection. Colour coded for segregation of signal types.



**WINSTA® Junction Boxes** – The distribution box is at the heart of the installation in many projects, acting as the star point for room connections. Flexible in its design, it can be fitted with as many or as few connectors as the design requires.



# Cable specifications

The approach by WAGO to the demands of WINSTA® lead production has been very professional with investment in automation as well as manpower, training and facilities.

The wire cutting machine, which can cut cable from 1.5mm<sup>2</sup> to 4mm<sup>2</sup>, can be set to cut to the exact length required and also removes the end insulation sleeve to the correct length for the WINSTA® male and female connectors. Automating this process ensures consistency and speed, providing reliability, accuracy and time saving in wire preparation.

The electropneumatically controlled automatic stripping and ferruling machine handles conductors from 0.5mm<sup>2</sup> to 4mm<sup>2</sup>, stripping the cable end and fitting a ferrule. The ferruled conductor end can be pushed straight into the WAGO CAGE CLAMP®S in the WINSTA® connector, making assembly easier, saving time yet guaranteeing a gastight connection. Once again automation provides consistency and time saving and maintenance free components in the machine guarantee high reliability. In addition, the automated process ensures the ferrule is fitted correctly and the required pull out forces are maintained.

Both these machines provide a significant reduction in manufacturing time, ensuring delivery times are reduced to a minimum. Finally, all assemblies are inspected and electrically tested.

The modular wiring and building automation industries are experiencing an increased use of LSF type cables in many applications, including publicly financed projects. WAGO is embracing this trend but can also accommodate other cable types if specified for interconnection leads. All cables used by WAGO for WINSTA® leads and in distribution boxes conform to the relevant internationally recognised standards.



# Project-specific deliveries



At WAGO, we know the importance of keeping promises to our customers. Time saved in installation should not be at the expense of delays in delivery and confusion regarding what parts have been sent and where they are to be used.

More and more frequently, deliveries have to be made to the project site at exactly the right time; there is no margin for error as there is often no space for deliveries to be stored on site.

Our Despatch department packages WAGO WINSTA® parts safely and securely to ensure they arrive at site ready to use, whether they are connectors, leads or wired distribution boxes.

For projects where several types of room are repeated in a building – for example a school, hotel or office development – kitting, where WINSTA® leads are packed “per floor” or “per room”, offers significant advantages for installation on site. In a recent hotel project, there were five types of room per floor. Each room type was independently identified so that the leads for each room could be ordered separately. So an order could be placed for 6 of room type A and 4 of room type B, for example. When completed, the WINSTA® leads were packaged “per room” so that the installer could be sure that all the leads required for one



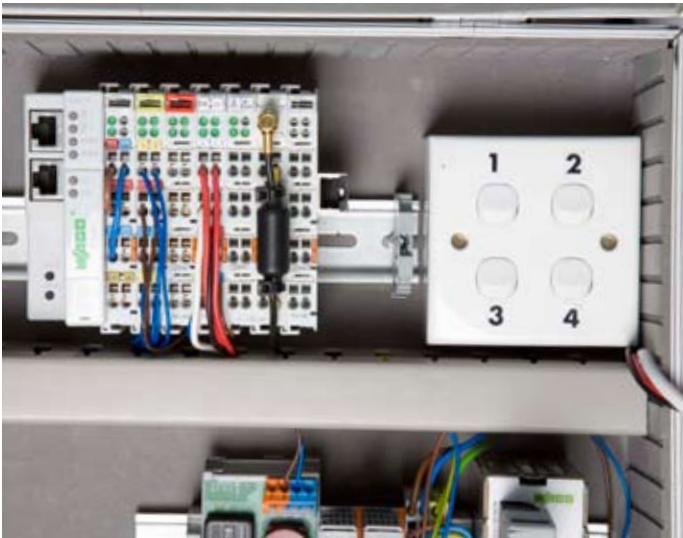
particular room type were delivered together and in one clearly labelled box. So no time was wasted sorting through different boxes to find the necessary leads. Orders can also be part shipped if required.

Our Engineering department and building services project consultants are on hand to give advice or make site visits to assist the design and planning process of projects, so that the advantages of the WAGO WINSTA® and building automation systems can be utilised to the full.

We also ensure that WINSTA® and I/O System parts are selected, integrated, assembled and shipped for the maximum benefit to the customer.



# Intelligent control capabilities



As well as the WINSTA® modular wiring system, WAGO offers intelligent solutions in the I/O System for building automation applications that can unite interacting utilities for designers, managers and installers. Specialist protocols for building automation include LONWORKS, one of the most powerful bus systems which has already been proven in many building projects, KNX, which simplifies electrical installation, BACnet and ETHERNET at network level plus the standard industrial fieldbus protocols, which could also be utilised depending on the application.

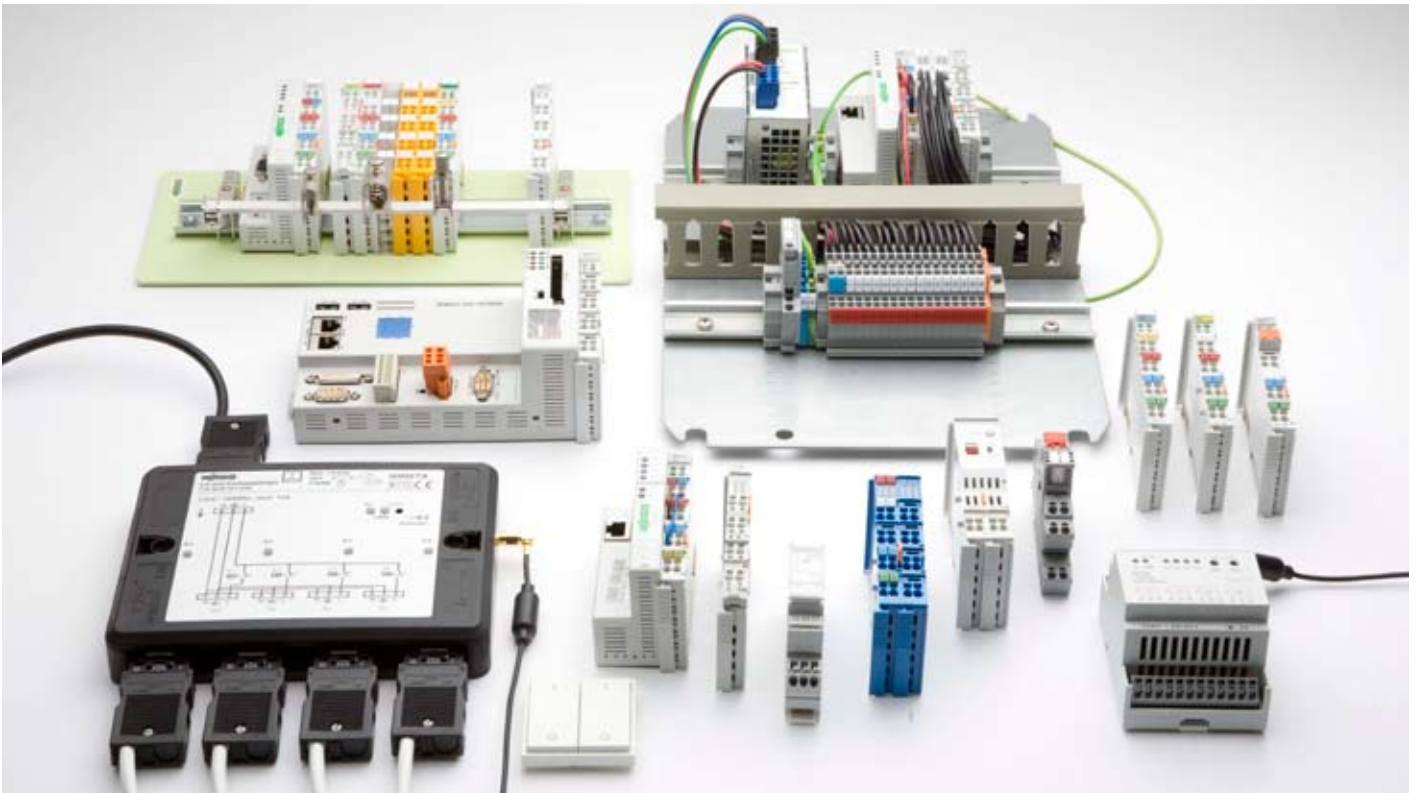
WAGO also has a range of gateway modules for EnOcean, DALI and KNX.

Cutting edge technology allows EnOcean sensors and the WAGO I/O System radio receiver module to interface without the hindrance of cables and batteries. The sensors obtain their energy from the environment by converting solar, heat and kinetic energy to electrical energy. The radio receiver module can be used with any controller of the WAGO I/O System. Also available is a WINSTA® distribution box for lighting and blind control.

The DALI master module from WAGO can be used for controlling up to 64 electronic ballast units in accordance with the DALI standard in building management to easily create lighting scenes and configurations. The use of DALI enables lighting systems to be easily parameterised and controlled and a large amount of additional information can be transmitted via controllers for ETHERNET, LONWORKS and other fieldbuses.

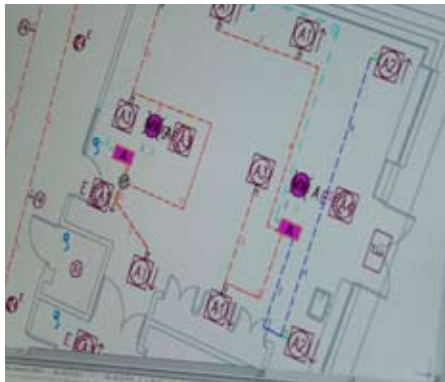
WAGO has developed a variety of KNX products, which offer improved performance and versatility for intelligent building control. Included in the range are the modular KNX/IP controller and KNX/TPI bus module which, combined, offer an integral KNX/IP router capability. In conjunction with modules from the WAGO I/O System, any digital / analogue sensors and actuators can be integrated into the KNX network for lighting, heating, ventilation and air conditioning control.

In addition, WAGO can call upon an extensive library to aid system programming.






# Advanced autocad solutions



Our experienced engineering team is able to prepare detailed, bespoke layout drawings showing the integration of WAGO's solutions – comprising WINSTA® lead assemblies, distribution boxes and other associated components - within the architecture of the end-users schemes. Their experience comes from understanding the needs of the modular wiring industry, both through product knowledge and close liaison with design consultants, customers and installers at all stages, which is vital in ensuring that WAGO delivers a solution perfectly suited to the project requirements.

The use of AutoCAD, the acknowledged industry standard in CAD systems, ensures the accuracy of the drawings and makes them accessible to project engineers and installers involved in the project. Additionally, producing the "take off" (bill of materials) required as the basis for WAGO's quotation is much easier when using the AutoCAD system. Drawings can be plotted (up to A0 size) or e-mailed to the customer for installation purposes, maintaining both the integrity of the design and communication between all involved throughout the project.

# A full range of components for intercon



WAGO's WINSTA® range of distribution boxes is diverse and extremely versatile. Internal wiring can be changed to suit different circuits, for example, series circuits and distribution, two way circuits and distribution with surge switch protection. For building Installation and automation applications, this same housing is used for EnOcean technology with WINSTA® connectors as a 4 channel radio receiver which can switch four independent electrical devices.

Bespoke distribution boxes, designed in-house to the requirements of the project planner can easily be adapted for future circuit modifications and extensions. The uniqueness and adaptability of the compact boxes allow total flexibility in initial project planning and also in trouble-free installation.

The WINSTA® MAXI range is a 5 pole power supply connector suitable for 6mm<sup>2</sup> conductors with a 32A rating. It is designed to be used in conjunction with WINSTA® distribution boxes to provide 4mm<sup>2</sup> tap offs at a guaranteed 25A rating, the 10A higher supply current being a benefit to upstream loads and voltage drop over long cable runs is minimised. The design ensures that the MAXI cannot be accidentally mismated with WINSTA® MIDI connectors.



# Connection applications



**Distribution connector with phase selector** – The extra feature allows equalisation of phase loading in a lighting circuit for example. Simple movement of the white lever selects the chosen phase



**Six pole strain relief** – This allows simultaneous use of two 3 pole connectors to make a 6 pole connector, essential in lighting control applications.



**Snap in connectors** – 2, 3, 4, and 5 pole (MINI and MIDI ranges) with integrated locking device make feedthrough connection easy. Direct earth connection to a metal enclosure is available as an option. More lighting manufacturers are fitting these as standard.



**Distribution connector** – This can act as a star distribution point, in a ceiling installation for example, with leads connecting each side. Mounting options are available.



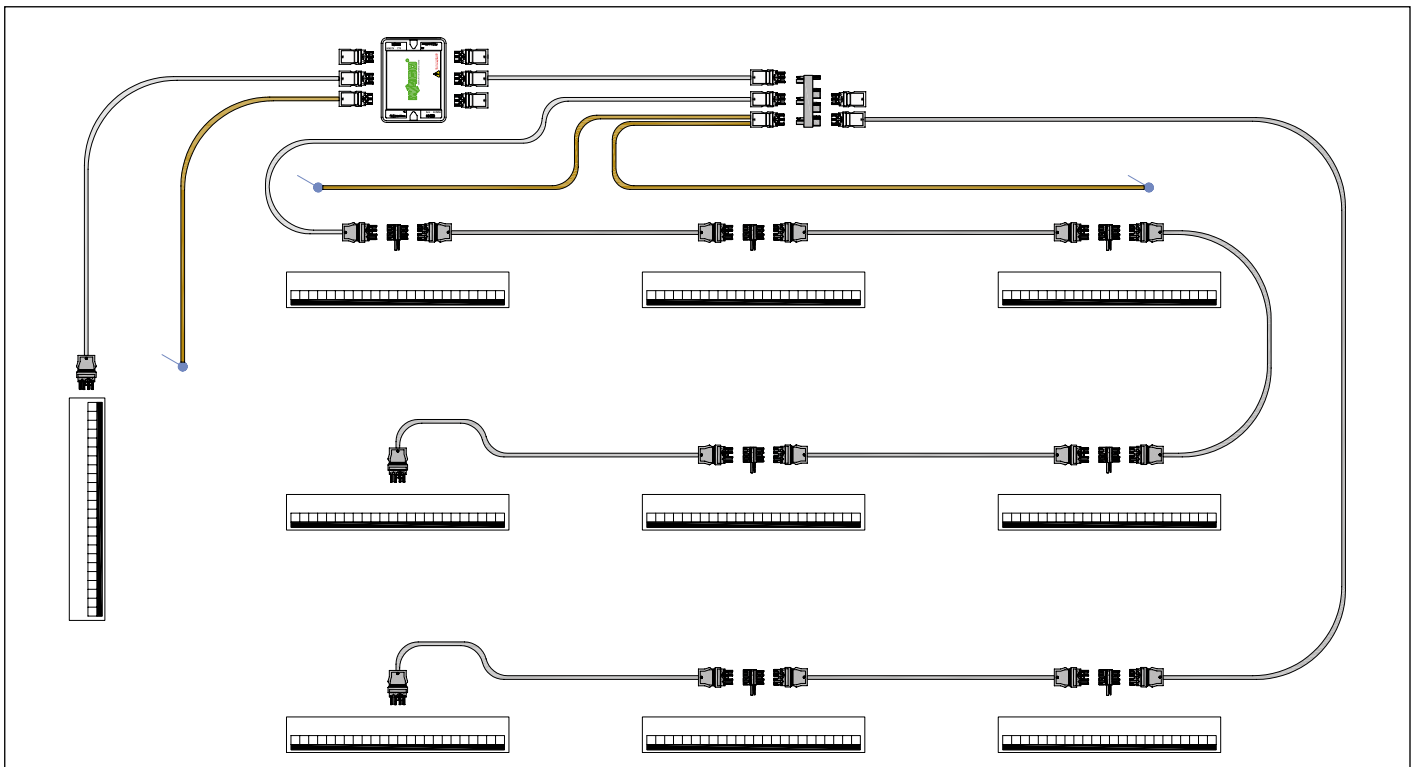
**T-pieces** – In 2, 3, 4, and 5 pole (MINI and MIDI ranges), these make the connection of lighting fixtures easy, without using a junction box. The through wiring is simply plugged in each side.



**Clean earth** – For use in clean earth and high integrity earth applications only, their different coding and colour ensure mismatching is not possible. Available in 4 and 5 pole, with either 2 or 3 earth connections and with 2 current carrying poles.



**Male and female connectors** – In 2, 3, 4, and 5 pole (MINI and MIDI ranges) with 2 conductor entries per pole (MIDI range) and time and cost saving CAGE CLAMP®S connection which allows looping through of wiring. The connectors have unique coding and colours and are pre-marked.



# Innovative, cost-effective solutions for



## Designing project specific solutions

Fast, reliable and tried and tested millions of times, the future of electrical connection clearly belongs to the snap-in connector and the WINSTA® modular wiring system has the right solution to satisfy any practical requirement in contemporary building applications. Connecting lighting fixtures in ceiling installations was one of the major challenges in the redevelopment of Munich Airport where WINSTA® impressed particularly with its high service capability and universal connection technology. Clients also benefited from the close co-operation between WAGO and its system partners in the lighting industry including lighting control specialists and system integrators.

Due to the rapidly rising number of flights in the last few years, it was decided to build Terminal 2 at Munich Airport, doubling capacity to 50 million passengers. Scarcely three and a half years after the beginning of construction work it was officially opened. For the comfort of the travellers, there are approximately 90 high quality retail premises and eateries. For most of these, good lighting design plays a key role in their commercial success. Since

the businesses are only closed for a few hours at night, special requirements were placed on the installation of the lighting. The WINSTA® range from WAGO with plug-in connection and adaptable leads has proven ideal for the flexible installation of lights around the requirements of a building and the special conditions of shop fitting.

The planners set themselves the goal of completing 35 shops within a year, from planning to completion. Allowing for the local conditions and the late availability of detailed plans as well as considerations for fire load, the cables were manufactured individually according to the structural measurements.

WINSTA® technology not only fulfills the standards and regulations, but also permits problem-free connection and easy extension of the lighting installation after the completion of the suspended ceiling. With this project the plugability of WINSTA® was the determining factor, so that the installer could carry out extensive preliminary work and keep the installation and connection of the lights until very late in the shop development. Assembly time could be shortened to a quarter of the planned time and be kept within the original completion time.



# building installations



**Storage Warehouse** (Top left) WAGO WINSTA® leads have been used to connect the lighting system in a 54,000 sq ft storage facility used for archived legal records. The fluorescent lighting is suspended underneath the metal decking walkway and, to keep cost to a minimum, the LSOH supply cables have been secured to the sprinkler system and small gauge cable tray. WAGO included hub boxes, supplying an average of 85 fittings, for distributing the load over 3 phases, incorporating a radio frequency switching circuit to eliminate the need for having many switch stations all over the building.

**Educational Building** (Bottom left) In partnership with the lighting company Ex-Or, the WAGO WINSTA® system has been installed in a large new college campus in the north east of England. An amalgamation of four former campuses, the new state-of-the-art development has transformed an area near the docks, providing many facilities for local people. WINSTA® is used to connect the lighting system with many intelligent PIRs from Ex-Or plugging into WAGO distribution boxes for lighting control. This is the largest single building in the UK that has been fitted with the WINSTA® system.

**Bewleys Hotel in Dublin** (Bottom centre) The building management system in Bewleys Hotel, Leopardstown, Dublin, is based on the WAGO ETHERNET controller and goes well beyond just lighting and temperature control. The WAGO I/O System can sit directly on the existing data network thanks to the ETHERNET controller. Functions such as lighting are also processed locally so the guest is not disturbed by any faults in the data network. New functions can be implemented at any time due to the modular design of the nodes..

**Capio Health Centre** (Top right) WAGO has supplied the WINSTA® system to several projects for Bailey, a division of NG Bailey, including the Capio Cobalt NHS Treatment Centre in Silverlink, North Tyneside. WINSTA® was used for both lighting and small power circuits as the client wanted to reduce costs and building time to ensure that the Centre could be completed as soon as possible and within budget. The use of WINSTA® for power meant that the radial circuit could be segregated with no chance of cross connections. The green dual earth connectors were used for the IT power circuit.

**Exhibition stand** (Bottom right) One of Europe's major Food Board organisations uses a very large modular mobile stand, for the purpose of promoting their country's food products throughout Europe. WINSTA® has been selected as the electrical wiring system for the stand because of its safe, reliable and easy connection and disconnection of lighting and power.





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