safe.inspiring.green.

References and applications
Housing technology

Indoor

Outdoor | unprotected

Protection and functionality in any location

With its industrial housings, Spelsberg offers high-quality, reliable components for numerous applications.
With more than 1000 different housing models, there are suitable and customisable solutions to choose from for a wide range of industrial areas of application, both indoors and also in protected and unprotected outdoor areas.

In industrial halls or on farms, in exposed locations or at installation sites which are not easily accessible, the maximum durability, reliability and robustness of the housings enables them to withstand the weather and chemical influences as well as dirt and dust.

Even in the case of mechanical influences up to interference by vandals, electrical installations remain protected in the long term. Spelsberg provides products that are readily available for any application and can withstand extreme loads, can be adapted to customer requirements and offer maximum ease of assembly and maintenance.

Outdoor | protected

This is achieved through the combination of a wide range of products, an extensive selection of accessories, excellent development expertise incarrying out customisations or the production of new products as well as certification in accordance with VDE and UL in the company's in-house test laboratory.

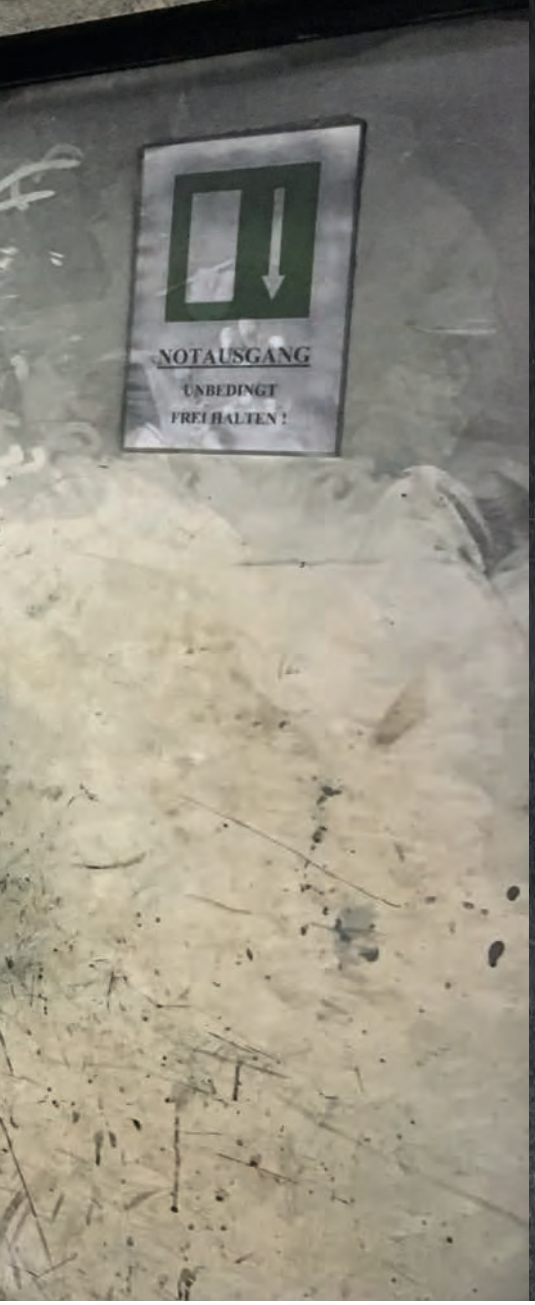
The robustness, functionality and flexibility of the industrial housings are illustrated by the best practice examples of installations in protected and unprotected outdoor applications as well as indoor applications described below.

Safety for every eventuality

Unlike those used outdoors, indoor housings are not exposed to the effects of the weather. So solar radiation is not usually a significant factor, the formation of condensation occurs far less frequently due to reduced fluctuations in temperature and precipitation and frost are not an issue at all.

Nevertheless, indoor housings must also be able to constantly withstand exposure to a wide range of influences, especially in industrial environments. They can be exposed to dust and dirt along with mechanical forces or chemical substances depending on the installation site in each case.

Safety-related electrical installations also need to be reliably protected against unauthorised access and vandalism, for example. It is precisely in these cases that customers can rely on Spelsberg's industrial housings which demonstrate their strengths in both indoor and outdoor applications.



INSTALLATION INDOORS |

WITH A HIGH LEVEL OF PROTECTION AGAINST DIRT, DUST, CHEMICALS OR VANDALISM

High levels of protection up to IP68 along with solutions with replaceable filter elements make them dust-proof and water-tight so that neither dirt nor moisture can get in. To avoid damage from external forces, the products also have impressive robustness with levels of impact resistance of up to IK09.

Housings and switching cabinets such as those from the GEOS series are also available with lockable cover or door systems which provide effective protection against unauthorised access.

Besides standard housings, Spelsberg also offers a wide range of customisation services – from simple revisions to new products – so that any requirements can be met in a competent and flexible way.

Indoor applica-

ROBUST SOLUTION FOR INDUSTRY 4.0 |

WITH GEOS FOR THE OPEN-SOURCE MANUFACTURING SYSTEM

Lightweight, impact-resistant, watertight + dust-proof

These were the requirements that **UMH Systems GmbH** gave us when they needed housings for the hardware for their innovative United Manufacturing Hub. The open-source solution from the Aachen-based company is used to extract and analyse data from production facilities. The hub comprises both software components and also the so-called United Factory Cube which can be connected by means of plug and play to all commercially available IoT systems as well as systems from the production and processing industry.

The data collected there are visualised via a dashboard and can be evaluated in real time. In that respect, there is also an urgent requirement in the industrial environment: a lot of companies are pushing ahead in the short term with pilot projects relating to Industry 4.0 and also require a reliable infrastructure. To remain competitive in the future too, switching to networked production, as offered by the United Manufacturing Hub, is essential. It enables companies to optimise their production processes, carry out predictive maintenance by means of state analyses and significantly improve the quality of their processes.

The areas of application of the hub range from hygiene applications in the pharmaceutical industry through filling systems in the food industry to the extremely harsh environments in heavy industry such as steel machining. After carrying out comprehensive research into suitable solutions via the Internet, the persons commissioned with the task came across our robust GEOS industrial and outdoor housings. They were drawn to the properties which enable them to withstand the effects of weather, temperature, chemicals or forces without any problems, making them the perfect solution based on the company's requirements.

The corrosion-resistant outdoor housings have a high impact resistance of IK09 and correspond to protection class IP66/67. There is also an impressive range of models and numerous options for customisation. Together with our customer, we developed a customised GEOS housing which included drilled holes, cutouts and individual printing.

"During the development phase in particular, the team from Spelsberg helped us by providing expert advice. They delivered best practices as well as appropriate ideas for revising the housings based on our preferences. So we are now able to offer our customers a robust and reliable hardware solution, without having to make any compromises on a technical level", says Alexander Krüger, Managing Director of Operations at **UMH Systems GmbH,** summing up the collaboration.

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC | halogen-free

Indoor applications

CUSTOMER-SPECIFIC CONCEPT DEVELOPMENT |

GEOS FOR ELECTRICAL INSTALLATIONS IN FLOOD PROTECTION SYSTEM

Lightweight, impact-resistant, watertight + dust-proof

When it comes to providing reliable protection for electrical installations with versatile installation options for maximum flexibility, GEOS empty housings are the right choice. Characteristics such as the intelligent, tool-free installation system for variable equipping with application-based components, along with their resistance, make them the perfect solution for a wide range of areas of application.

That includes installation in a modern flood protection system control room in **Wassertrüdingen, Middle Franconia** where GEOS ensures that the external switchgear is protected against overvoltage. An essential part of the flood protection measures involved ensuring the landside inland drainage via a total of five technical systems for which permanent operations building was built for control and regulation.

Elektro Habermann GmbH from Weitlingen was commissioned to carry out the necessary electrical installation works. The company installed power and control units in a false floor in the control room amongst other things, along with the associated lines to the external pumps and sensors. Housings in which the components could be installed without any problems were required in order to provide them with constant protection against overvoltage.

The flood protection measures in Wassertrüdingen coincided with the holding of the 2019 horticultural show for which the town of Wassertrüdingen had put itself forward in 2014 and subsequently been chosen. In the application documents for the horticultural show, the Ansbach Water Authority's plans for the flood protection measures were implemented as a fixed part of the state event.

The aim was to integrate the flood protection in the urban and rural landscape in a sophisticated way. Spelsberg's GEOS empty housings made from resistant polycarbonate were chosen. They combine robustness and flexibility during installation so that customer-specific requirements relating to equipment are always met.

"What impressed us about the GEOS housings is that they are high-quality products with a very good price-performance ratio. We benefitted from the wide range of expansion options during installation and we can rely on the stability and safety of the housings in practice", says electrical engineer Daniel Pattloch from **Elektro Habermann GmbH** as he explains why GEOS housings were chosen. Since then, the control units have operated with comprehensive protection, ensuring that the region is protected against flooding."

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC | halogen-free

CUSTOMISED INDUSTRIAL SOLUTIONS |

INDIVIDUAL SPELSBERG HOUSINGS FOR COOLING CONTROLLERS

BERNDT|CONTEC
Messen - Regeln - Überwachen

High-performance cooling controllers

According to the area of application in each case, industrial housings have to meet a wide variety of requirements which standard designs are not always able to do. In such cases, customers can rely on the knowhow of Spelsberg and put their whole development and production process in the competent hands of the housing specialists. For the company can also carry out the modification of standard models or produce completely new housings. **BERNDT CONTEC GmbH & Co. KG** from Gelsdorf also benefited from the development of customised solutions when searching for suitable housing for its high-performance cooling controllers. The company has been the go-to contact for control systems for temperature measurement, regulation and monitoring – particularly in industrial environments – for more than 30 years. As the sales partner of choice of LAE ELECTRONIC S.p.A., it equips cooling applications worldwide with the best components and produces tailor-made special printed circuit boards and switching cabinet systems. Experts rely on fast response times and maximum flexibility, especially when it comes to the construction of customised systems. Solutions from **BERNDT CONTEC** are inspected based on VDE guidelines ex works, fully programmed and preset to customer requirements based on system-specific parameters. The company was looking for a partner who could respond to individual requests both flexibly and in a solution-oriented manner and provide housings for the standard cooling controllers it had developed in-house amongst other things. From its own research, it quickly became clear that both the range of services and products offered by Spelsberg fit the company's requirements.

"During the first phase of development of our standard cooling controller, it was particularly important to us to find a manufacturer who could mill the front using the negative method and provide housings with a modular construction. Spelsberg fitted the bill perfectly", explains Christoph Kauer, certified technician and product manager at **BERNDT CONTEC GmbH & Co. KG.**

Together with the Spelsberg team, the company focused on the swift and targeted realisation of the finished product ready for production. The cooling controllers are based on TG PC and AK empty housings. For the AK 14-L and AK 28-L, Spelsberg designed and produced a closed cover with customised tool insert. These adjustments ensure that it is possible to install a recessed main switch as well as the functional film via recesses and holes.

Thanks to the uncomplicated and flexible customisation by Spelsberg, **BERNDT CONTEC GmbH & Co. KG** has launched more than 25 different models on the market to date and continues to rely on its collaborative partnership with the experts in housing technology: "Our collaboration with Spelsberg has been successful in every way. The company's highly committed employees always find the right solution for us to be able to achieve our aims together – to the complete satisfaction of our customers", concludes Christoph Kauer.

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC | halogen-free

Indoor applica-

CUSTOMER-SPECIFIC CONCEPT DEVELOPMENT |

SIMPLE AND QUICK FIXING IN A SMALL SPACE

Lightweight, impact-resistant, watertight + dust-proof

First-generation pod bathrooms were possibly still somewhat utilitarian but it was their simple installation which saved time and money that won people over. Over the years, the concept has been developed so that today's pods include all the functions and fittings that go to make up a comfortable and modern bathroom. Installation of the bathroom pods is based on Spelsberg's TK housings. These are empty housings that are built to a quality standard suitable for use in demanding environments. They are made from glass fibre-reinforced polycarbonate and come with a polycarbonate cover. They have double membrane seals and insulating plugs to ensure complete protection for the electrical connections inside. They are available in a range of sizes and can be customised if required. The housings are pre-assembled with DIN rails and terminal connections prior to delivery. As a rule, there is one switching cabinet per pod so that all the connections are located in one central location. So only set of connections has to be made during installation on site. As soon as the equally rational sanitary installations have been connected, the bathroom is fully functional and ready for use.

Spelsberg has taken numerous aspects into account such as e.g. the levels of protection and the general robustness that are required in the various areas of application, the simple and quick fixing and the space available for the devices to be installed.

The GRP pods tend to be installed in student accommodation, care homes, military establishments and refurbishment projects. The steel frame pods are usually destined for installation in residential buildings and hotels.

IP66 IK08 690V AC 1000V DC halogen-free

Indoor applications

CUSTOMISED WIRING SOLUTION |

FASTER CNC MODIFICATION DUE TO ROBUST TK ELECTRICAL HOUSINGS

Quality, reliability and speed

A quick CNC modification to the robust TK electrical housings has enabled AWS light controllers to be installed and safely wired in the roof space in half the time thanks to tailor-made cable entries and ideal cabinet dimensions.

The AWS system replaces the traditional wiring of electrical sub-circuits with a series of advanced, prefabricated plug connectors and cable assemblies which are quick and easy to install and which have enabled the installation time to be reduced by up to 70%.

System assembly and installation is primarily about quality, reliability, simplicity and speed of installation. The housings from Spelsberg's TK series have IP66-rated seals and are available in a wide range of different sizes, including slimline units for use in control and measurement devices as well as in general lighting systems.

All the models in the series take DIN rails and mounts for printed circuit boards and can easily be customised to fit a wide range of different components and cable entries.

The series comes with standard covers which can easily be machined in order to integrate controls, indicators, keypads and LCD displays. Robust transparent versions which enable the visual checking of the circuit status are also available.

IP66 IK08 690V AC 1000V DC

Well-thought-out

The installation of housings for electrical installations in protected outdoor areas does not mean that the equipment is already sufficiently protected against external influences. Even under roofs that protect against direct solar radiation or precipitation, they are still exposed to the weather.

Fluctuations in temperature, frost, dust and dirt, chemical stresses as well as possible unauthorised access necessitate the use of housings with a high level of protection. Weather-related processes such as e.g. the formation of condensation must also be prevented by means of appropriate product solutions and accessories.

Spelsberg's industrial housings fulfil all the requirements for protected outdoor areas. For example, they have high levels of protection up to IP68 and impressive weather resistance as well as being able to withstand external mechanical forces.

INSTALLATION IN A PROTECTED OUTDOOR AREA |

USING HOUSINGS PROTECTED AGAINST THE WEATHER AND MECHANICAL FORCES

Details such as knockouts and accessories such as the BEL Air ventilation system also effectively prevent condensation from forming inside the housings. For special areas of application such as e.g. agriculture or shipbuilding, there are DLG- and DNV-GL-certified housings to choose from.

The Spelsberg range also includes numerous optional components such as lockable door systems, door stays or lighting systems for housings, ensuring maximum security and comfort.

GEOS despite difficult conditions

Thanks to their product characteristics, Spelsberg's industrial and outdoor housings are as versatile as their areas of application. A prime example of this can be found at **Schurr Gerätebau GmbH** in Uttenweiler, Baden-Württemberg. Founded in 1992, this familyrun company manufactures automatic 2-brush systems for dairy cows, pigs, calves and goats as well as other solutions for farms worldwide.

The brushes are used both in barns for animals and also outdoors which means that they are constantly exposed to mechanical and chemical influences as well as to dust and dirt. A reliable housing was therefore required to protect the sensitive electrical installations. That is why the manufacturer has been relying on Spelsberg's industrial housings since 2012 and has always valued the successful collaboration and expert advice on individual configuration provided by the experts in electrical installation and housing technology.

In 2020, Spelsberg presented its GEOS housings to its customer which can reliably withstand the effects of weather, temperature, chemicals or forces even under difficult conditions. Being DLG-certified products, they are ideal for the high demands of agricultural working environments. Besides their maximum level of resistance, they also have an impressive range of models and numerous customisation options.

Protected outdoor areas

RELIABLE PROTECTION FOR BRUSH SYSTEM

GEOS HOUSINGS ON THE FARM

Consequently, since then **Schurr Gerätebau GmbH** has also relied on housings from the GEOS series. These are processed and assembled at a facility for people with disabilities based on a customised configuration. In the interest of animal welfare, the housings ensure that the brush systems for cleaning and massaging animals are constantly functional.

"Spelsberg's industrial and outdoor housings meet all of our requirements which include a high level of protection, robustness, machining options and a functional shape. There is a good reason why we have been working with the manufacturer for such a long time and we look forward to many more years of successful collaboration", says Philipp Schurr, director of **Schurr Gerätebau GmbH**.

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC | halogen-free | iQ

Spelsberg develops charging station based on the GEOS housing

The need to reduce CO2 emissions has resulted in the demand for e-bikes rising dramatically over the past few years. Bicycles with an electronic motor make it possible to cover longer distances comfortably too without using a car or public transport. So it is no wonder that more and more people are switching to e-bikes and pedelecs. The BCS Smart and Pure e-bike charging stations enable cyclists to recharge the battery on their bicycles safely and conveniently without having to carry a charger with them.

The innovative and extremely robust GEOS housing serves as the basis of the charging station. It holds the charging and monitoring electronics safely, is customer-friendly and has a modular design so that other charging systems can also be installed at the customer's request. The translucent cover enables the LED light to shine through while the foil covering the corners of the cover make the design of the charging station unmistakable.

The sides of the box provide sufficient space and flexibility to fit two Schuko socket outlets, cable holders and cable glands. The BCS smart system is linked to the Spelsberg cloud via LTE, WLAN or LAN, enabling it to be controlled and monitored via a management portal. The optional BCS Finder app and external systems such as Komoot or BikeMap for e-cyclists are also supplied with data from the Spelsberg cloud, showing cyclists the quickest route to the nearest free charging point.

Protected outdoor areas

THE BCS E-BIKE CHARGING STATION

SPELSBERG DEVELOPS CHARGING STATION BASED ON THE GEOS HOUSING

The extremely robust GEOS housing is designed for outdoor use and means that the bicycle can be charged all year round. The BEL-Air ventilation system ensures the constant exchange of air while maintaining the level of protection.

"From our extensive housing portfolio, the GEOS housing was the perfect choice for this application. The size, resistance and flexibility of the GEOS system provided a wide range of expansion options during development and assembly. We can also rely on the stability, suitability for outdoor use and security of the housings", says Utkun Coskun, Project Manager at BCS.

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC | halogen-free

Protection in ammonia-rich conditions

The housings which are certified for installation in ammonia-rich agricultural applications have been provided with CNC-machined entry points and customised mounting plates in order to speed up the manufacturing process.

The EasiDoser™ is a range of automated dosing and dilution systems which dispense and dose precise quantities of fluid for cleaning or disinfection purposes. The device has an LCD display and key-pad on the front which makes set-up easy and is fully configurable, making the housing suitable for a wide range of applications.

The system is based on the combination of Ambic's tried and tested range of per-istaltic RFE pumps for small and large vol-umes and a new microprocessor control system which was developed in-house.

Protected outdoor areas

HYGIENE APPLICATIONS IN DAIRY FARMING |

AMBIC SPECIFIES SPECIAL HOUSINGS

The customer-specific entry solutions and the customised mounting plate facilitate installation and also help to maximise the reliability of the finished product.

Spelsberg understands the special demands of the farming and agricultural industry which is why most of its housings are certified in accordance with DLG standards (Deutsche Landwirtschafts-Gesellschaft - German Agricultural Society).

IP66 IK08 690V AC 1000V DC

Thermostats to protect against frost

Insulation and temperature management in pipelines for industrial processing and for commercial properties is important all year round. When the nights draw in and temperatures drop, facility managers start to think about the risk of pipes freezing in particular. **Lagwell Insulation** specialises in thermal insulation and has many customers in the industry, commerce and the public sector all over Europe.

The company relies on Spelsberg thermostats to deliver performance and value for many of its frost protection systems. **Lagwell Insulation** designs and installs trace heating systems for new buildings and also offers retrofit solutions for older buildings. The company's expertise extends to sites of all sizes and with varying levels of complexity.

Besides chemical processing and production plants, it also regularly serves commercial and public buildings such as hospitals, schools and airports. For many frost protection systems, Lagwell relies on Spelsberg thermostats due to the quality of the product and the reliability of the customer service provided.

Protected outdoor areas

PREVENTING PIPES FROM FREEZING |

THERMOSTATS IN SPELSBERG HOUSINGS

The HT thermostats are turnkey units which are installed in Spelsberg's IP66-certified TK polycarbonate housings. The HT series can be fitted with a range of different thermostats.

Operating temperatures of -10-90 °C, 0-40 °C, 30-120 °C, 35-210 °C and 50-320 °C are possible. These temperature ranges make them suitable not only for providing frost protection but also for numerous other tasks.

IP66 IK08 690V AC 1000V DC halogen-free iQ

Thermocable prevents pipes from freezing

Installing a trace heating system can save a company potential downtime and costly repair bills and even save lives in critical cases if it is installed in a sprinkler system or other safety-critical applications. Thermocable has developed a range of trace heating monitoring systems which permit 24/7 monitoring and provide additional protection in the event of a fault or a period when temperatures are extremely low.

Depending on requirements, the ProMinder Standard or Advance can constantly monitor pipes so that companies can maintain the exact critical temperatures required for their specific industrial process. The ProMinder Standard can be retrofitted to any existing trace heating system if the security afforded by regular monitoring is required.

The ProMinder Advance is available with specially designed cables which offer a backup heating system as well as a turbo heat function for extremely cold temperatures. Spelsberg is well-known for its customisation capabilities as well as for having its own CNC machining facility and assembly service.

Protected outdoor areas

SAVING ON HIGH REPAIR BILLS |

HOUSINGS WITH THERMOSTATIC CONTROLS

The housings are robust and provide protection against environmental influences. In addition, the customised service makes installation easier. The TK series is available in hundreds of different sizes and configurations as standard.

The robust polycarbonate construction makes the housings resistant to impacts and also provides UV and corrosion protection while injection-moulded polyurethane seals provide reliable permanent protection against the ingress of dust and moisture.

IP66 IK08 690V AC 1000V DC

For all weathers

In unprotected outdoor areas, customers need to be able to rely on the exceptional reliability of housings for electrical installations. They alone make the difference when it comes to protecting equipment all year round and in all weathers.

External influencing factors – solar radiation, extreme temperatures, precipitation, frost, dust or mechanical or chemical stresses – are as challenging as they are varied. Spelsberg has developed its industrial and outdoor housings for every installation situation, no matter how demanding.

They include housing types which, with their resistance and also functionality, are specially designed for harsh environments such as industrial or agricultural operations. So the materials used ensure a high level of resistance to UV radiation, provide levels of protection of up to IP 68 and have impressive resistance to the weather as well as mechanical forces.

INSTALLATION OUTDOORS |

UNLIMITED PROTECTION FOR OUTDOOR APPLICATIONS

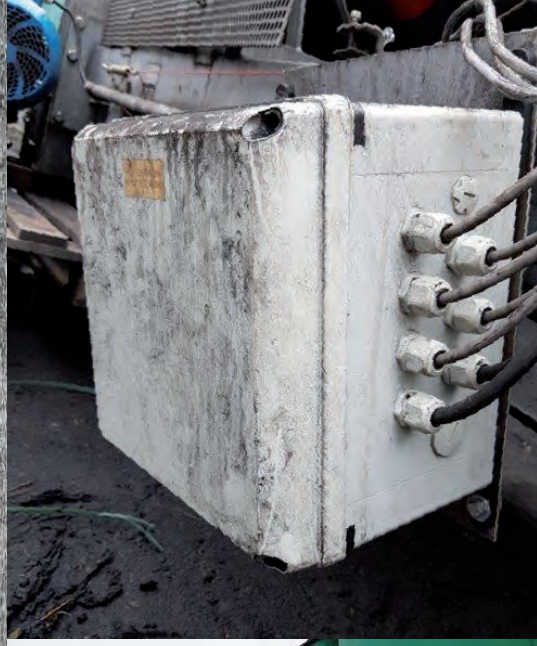
Thanks to DLG and DNV-GL certificates, individual products are also the appropriate choice in the case of exposure to ammonia or salt water. While the tightness of the housings effectively prevents the ingress of water, solutions such as the BEL Air ventilation system guarantee the constant exchange of air, thus preventing the formation of condensation.

Spelsberg can respond to a wide range of installation situations by providing flexible solutions, expert advice and even individual customisations or new products.

Unprotected outdoor areas

DUST-PROOF GEOS HOUSINGS IN USE |

SECURITY OF SUPPLY FOR COAL CONVEYOR BELTS



Robust housings for the coal industry

Besides their exceptional resistance, the versatility of GEOS housings in harsh industrial environments in particular is impressive. The intelligent and tool-free installation system and the mounting plug in the box play a major part in this. As a result, customers are provided with numerous possible applications as well as greater versatility in respect of production processes, for example. And that is also the case at the **Emscher Aufbereitung GmbH** plant in Duisburg where GEOS housings ensure the portable use of coal conveyor belts. Founded in 1957, the company was originally involved in the processing and utilisation of carboniferous sludge fromthe river Emscher.

However subsequently, it also carried out the grinding of raw coal into pulverised coal to supply power stations and cement manufacturers. Since 1987, **Emscher Aufbereitung GmbH**, with its six combined grinding and drying plants, has been supplying neighbouring blast furnaces and other consumers with over 2 million tons of coal dust per annum. The company also constantly strives to make further developments in respect of the automation, control and monitoring of the plants in order to save energy, reduce CO^2 emissions and optimise the end product and energy flows.

To supply multiple mobile coal conveyor belts with power, the company needed extremely robust and reliable housings customised to accommodate the corresponding electrical installations. The solutions were to be used as connection and intermediate terminal boxes and also as a cable feeder for lighting units. The requirements were also clearly defined: "Due to the numerous external influences at our site, we required resistant and dust-proof housing designs with a high level of UV resistance.

It was also important to us for the internal configuration to have a flexible design and for it to be possible to carry out mechanical processing without any complications", explains Stefan Myja, certified technician in power engineering and process automation at **Emscher Aufbereitung GmbH**. The Duisburg-based company has had a good relationship with Spelsberg for many years and was given a comprehensive presentation on the GEOS series at a trade fair. Consequently, **Emscher Aufbereitung GmbH** brought its specific requirements to the experts in electrical installations and housing technology.

After a personal consultation with the Spelsberg team, a quotation along with detailed parts lists and construction drawings were provided in a very short space of time. The flexible GEOS system enabled the housings to be equipped individually without any problems. They were provided with sockets and terminal blocks among other things and since then have enabled the portable use of the conveyor belts – with maximum safety and reliability in respect of all the components.

"In our opinion, Spelsberg offers the best range of small distribution boards on the market for the specifications we require. We appreciate the highly solution-oriented collaboration and have been completely won over by the quality of the products", says Stefan Myja.

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC | halogen-free | iQ

Unprotected outdoor areas

GEOS - SAFE ELECTROMOBILITY |

WALLBOX HOUSINGS FOR AIXACCT

Resistant housings for electromobility

Founded in 1999, today **aixACCT** is active in three areas of business at the same time. While the company initially focused on test systems and components for the automotive industry as well as microsystem technology, in 2015 the course was set for specialisation in the field of electromobility with the development of the company's own charging systems. And with great success: about six years later, e-mobility under the umbrella of **aixACCT charging solutions** makes up a large part of the group's activities.

The functional solutions for sustainable mobility are aimed at key customers looking to supply their vehicle fleet with power via a range of charging points up to entire charging parks. In connection with these, **aixACCT charging solutions** operates across Europe. In order to protect the sensitive components, the persons responsible set clear requirements for the housings: "When it came to choosing the right housing, it was very important to us that not only should it comply with protection class IP44 required but also we should be able to offer our customers solutions that could permanently withstand heavy rain and storms", explains Dr. Stephan Tiedke, General Manager of the **aixACCT Group**. In addition, impact resistance should also be guaranteed in order to be able to provide a constantly functioning charging infrastructure in both non-public and public areas. It quickly became clear that Spelsberg could meet all of the requirements specified with its GEOS outdoor housings and that it also offered numerous customisation options.

Taking the GEOS housing as a basis, the Spelsberg team worked with **aixACCT charging solutions** to find the right solution to accommodate all the components for the charging systems. The GEOS product series has impressive robustness, flexibility and maximum security. Durability is mainly ensured by the high-quality material polycarbonate (PC). It is UV-stable as well as weather-resistant and protects internal fittings against very high or low temperatures and the effects of oil or grease.

There is also a special design based on the GEOS sealing principle "Drain Protect" which makes the housings permanently resistant to the ingress of moisture in conjunction with a number of measures. All products comply with the high protection class IP66/IP67, are comprehensively certified to IEC 62208, UL 50, UL 50E and CSA 22.2 and tested in accordance with IEC 61439.

"It is essential for us to have a partner who can respond to different requirements at any time. With Spelsberg, we can always rely on fast and flexible solutions – from individual drilled holes through special sealing variants to the use of the in-house research laboratory for inspection and test purposes."

Jochen Olivier
Head of Electromobility
aixACCT Group

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC | halogen-free | iQ

Unprotected outdoor areas

GEOS HOUSINGS IN USE |

INDIVIDUAL CUSTOMER SOLUTION FOR ELECTRIC MOBILITY

Own wallbox for Stuttgart-based company

The development of electric mobility calls for reliable components to help supply environmentally-friendly modes of transport such as electric cars with power.
Spelsberg offers a variety of product solutions for this, including electrical connectors, charging stations and housings for wallboxes. The manufacturer produced the latter based on GEOS empty housings for Stuttgart-based **Berner Elektrotechnik GmbH**.

Founded in 1985, the workshop has now established itself as a certified company with more than 120 expert staff and decades of experience carrying out projects for customers ranging from single-family homes to large industrial plants. In the process, the specialist business takes care of installations in fields such as lighting, heating, communication and safety. However, it is also increasingly concentrating on new technologies such as e.g. photovoltaics and e-mobility.

In Spelsberg, **Berner Elektrotechnik** found a competent and solution-oriented partner to help develop the company's own wallbox. The company from Stuttgart was looking for a suitable housing and needed expert help with both the installation of all the technical components and the design.

Internet research quickly identified Spelsberg's versatile, flexible and extremely robust GEOS empty housings as a possible solution. After contact was made, the Spelsberg team worked with its customer to develop an individually customised housing in black polycarbonate.

The intelligent installation system for quick tool-free assembly based on a 25 mm grid, as well as the possibility of variable equipping with profile rails, meant that every component could be housed in the GEOS housing without any problems.

"We are extremely satisfied with both the collaboration between us and also with the wallbox that we ended up with. Spelsberg offered us all kinds of customisation options so that we were able to design both the inside and the outside just as we wanted. On a human and technical level, Spelsberg won us over as the best possible partner for our project", Florian Spahr from **Berner Elektrotechnik GmbH** concludes, full of praise for Spelsberg.

IP66 IP67 | TYPE 4X | IK09 | 1000V AC | 1500V DC

Unprotected outdoor areas

STRINGENT REQUIREMENTS FOR OUTDOOR USE

WI-FI NETWORK INSTALLATION

Installers rely on TK housings

A key element for a reliable network is the quality of the housings in which the access points are installed. That is what makes Spelsberg's TK housings so popular with installers. Polystyrene housings for indoor use and polyester versions for outdoors are resistant to the destructive effect of ultraviolet light.

Networks are installed in production plants and other industrial facilities, warehouses and distribution centres. These are generally recognised as being rather harsh environments for electronic devices.
However TK housings are also used for the installation of WiFi networks in public buildings such as schools, leisure centres and medical centres.

TK housings are available in both polystyrene and polycarbonate versions in a wide range of sizes so that the end user can choose units that are perfectly suited for their particular application.

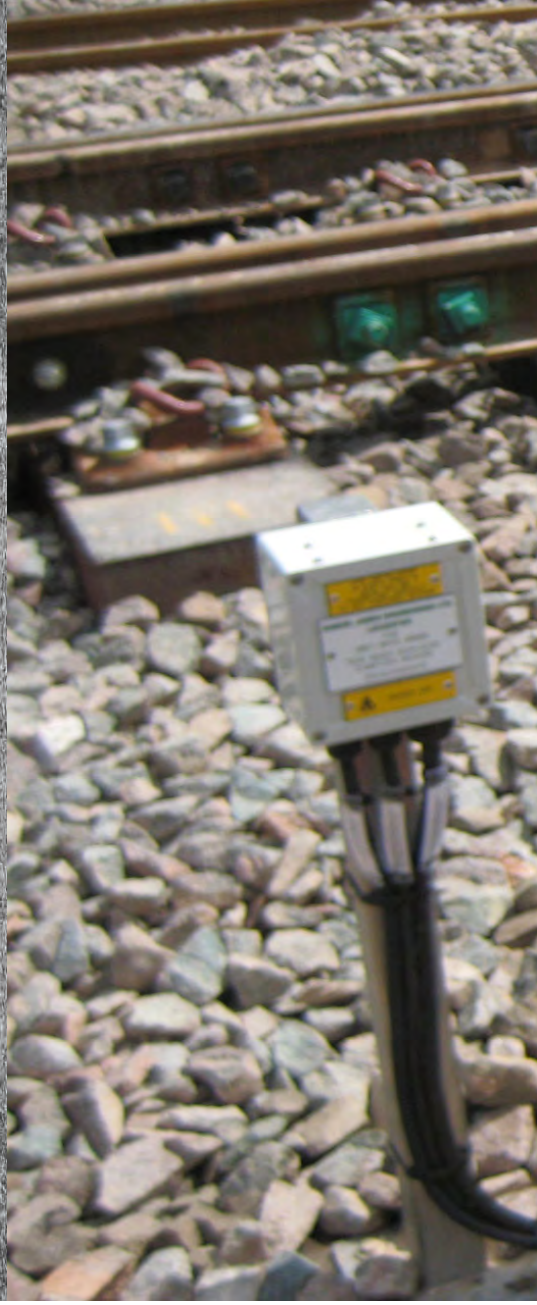
Spelsberg's TK housing series are available with a wide range of accessories including DIN rails and mounting plates (steel and insulated) as well as transparent covers. A choice of metric knockout cable entries was included in the standard range based on the most popular customer requests. The company offers CNC machining for customised configuration of entry points and laser marking for company logos, certifications or instructions. The TK series has protection class IP66, offering excellent protection against the ingression of dust and moisture.

IP66 IK08 690V AC 1000V DC

Unprotected outdoor areas

THE BENEFITS OF ROBUST TK HOUSINGS

NON-METALLIC HOUSINGS - THE FUTURE FOR TRACKSIDE INSTALLATION



Samuel James explains the benefits of plastic over metal

Samuel James is one of the largest manufacturers and suppliers of points heating systems for the UK rail network, helping to ensure that the transport infrastructure doesn't freeze in cold weather. When designing any external electrical application, one of the first and most vital considerations is the choice of housing. Apart from the obvious considerations such as e.g. the level of protection and the ability to withstand significant temperature fluctuations, it is important to think about the location of the product and any possible hazards that it could be exposed to during its service life.

All **Samuel James products** come with a guaranteed service life of 25 years so it is important for the housings in which they are installed not to corrode or become weakened in the harsh environment. Spelsberg's heavy-duty GRP housings provide effective protection against corrosion for electrical and electronic control systems in the harsh and abrasive trackside environments. The material provides a high level of robustness with minimum thickness so that maximum internal space is made available for installation while still ensuring protection against external influences such as e.g. stone chippings.

After the housings were subjected to rigorous tests, it was found that the robust GRP and polycarbonate construction provided better protection against impacts compared with conventional metal housings. They also provide IP68 protection, are resistant to the corrosive effect of brake dust, exhaust fumes and the weather and ensure excellent electrical insulation which in turn improves safety for the maintenance team.

Doors can be mounted left- or right-handed and the hinges enable the door to be opened 240 degrees for easy access to the control cabinets. An integrated drip shield directs liquids away from the door cover in external environments while options include key locks for security and a stylised glazed door, facilitating visual inspection of the components inside.

CNC machining of plastic housings can be carried out without any problems and all housings are supplied fully assembled with pre-drilled entry points and hinged covers for easy on-site access. Spelsberg's GRP and polycarbonate housings are available in a wide range of standard sizes which can then be quickly adapted to customers' specific requirements and assembled in large or small order quantities.

Entry points can be sealed using traditional IP68 dome-topped cable glands or quick-acting grommets which provide IP67 seals and can be installed in less than a minute.

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