

**You want to seize the opportunity of the energy revolution.
We supply the solutions for sustainable innovation in the
industries of Oil, Gas and Petrochemical's
Let's connect.**



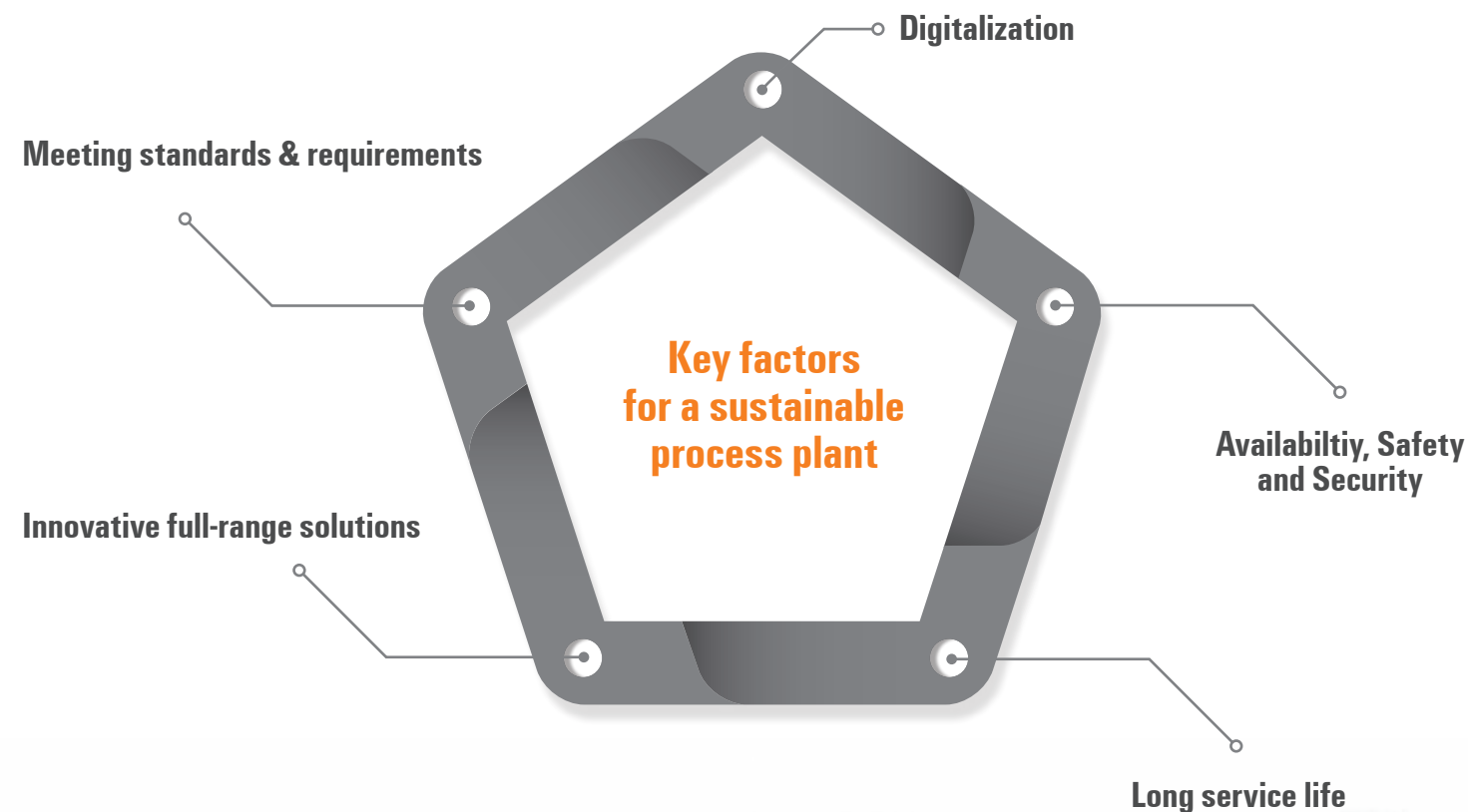
Weidmüller 

Future-proof and reliable solutions for the process industry

The increasing global demand for energy sources presents the process industry with many new challenges from exploration to consumption, which can only be met with the help of technology and active safety concepts. Investments in research and development are a decisive competitive factor for players in the market. One thing is clear: those companies involved must now set the course, use their resources and prepare for the upcoming paradigm shift. The challenge for the industry is to use those technologies that ensure reliable production and sustainable supply. Our products, systems and solutions guarantee a safe, effective and sustainable success in the processes of any plant.

Technologies made in Germany

For over 70 years, the name Weidmüller stands for the highest level of competency, expertise, quality, service and reliability when it comes to our customers. With our well-known brand Klippon®, we strive to be the market leader in offering connectivity, communication and digitalization solutions for the interface between safe and hazardous areas with continuous uninterrupted signals, as well as limiting energy to protect from the risks of explosions.



Practice-proven solutions for your increasingly complex challenges

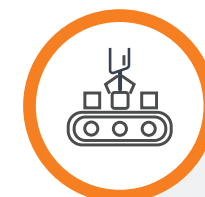
Large process plants are associated with enormous costs and risks for owners and operators. They aim for a long-term focused return-on-investment. Beside this, safety is a crucial KPI in today's process industry business. Reliability, product

quality, future-proof and high-level support are key factors. As a long-standing and experienced partner for the process industry, our customers can be sure of ...



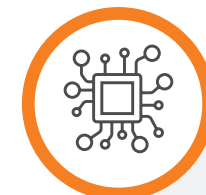
Expertise

We provide Unrivalled knowledge in the supply of customized Hazardous Area solutions.



Automation

Our solutions secure power, signal and data transmission for maximum plant availability and efficiency in the system.



Digitalization

Benefit from process data through to intelligent data-based services for zoned and non-zoned areas.



Safety

Reduce error-rates to a minimum with comprehensive certification solutions such as G3 coating, SIL3, Atex, UL&CSA, IECEx, GOST.



Quality

We run universal conversion platforms for legacy DCS migration solutions for signal packing, marshalling and distribution.



Solutions

We think holistically, from robust and secure site monitoring over remote and local diagnostics to secure networks to the cloud.

"With rising global demand, highly volatile prices and increasingly stringent environmental regulations, the oil and gas industry faces three major challenges:

- *reduce costs,*
- *optimize the performance of its industrial base assets and*
- *improve its environmental.*

Weidmüller has been a partner for the oil & gas industry for 70 years, because our services and products are improved permanently. We continuously develop future-proof and sophisticated products and solutions to meet the upcoming technological and regulatory challenges. By choosing Weidmüller, you get a high quality full-range portfolio made in Germany, paired with a rigorous customer-centric service."

Stuart Bell
Vice President Global Sales Project Management

Facing challenges with reliable and innovative solutions

Looking into the various areas of the today's plants, there are many challenges and requirements for future process plants. As a reliable partner, we offer products and solutions for each area, which support the automation, optimization and further processing of the systems:

Upstream

We provide application-specific solutions for on- and offshore production systems with a focus on process safety. Whether through developing safe and efficient production processes or providing reliable process monitoring and secure data transmission, our solutions provide the maximum level of automation to any production system

Midstream

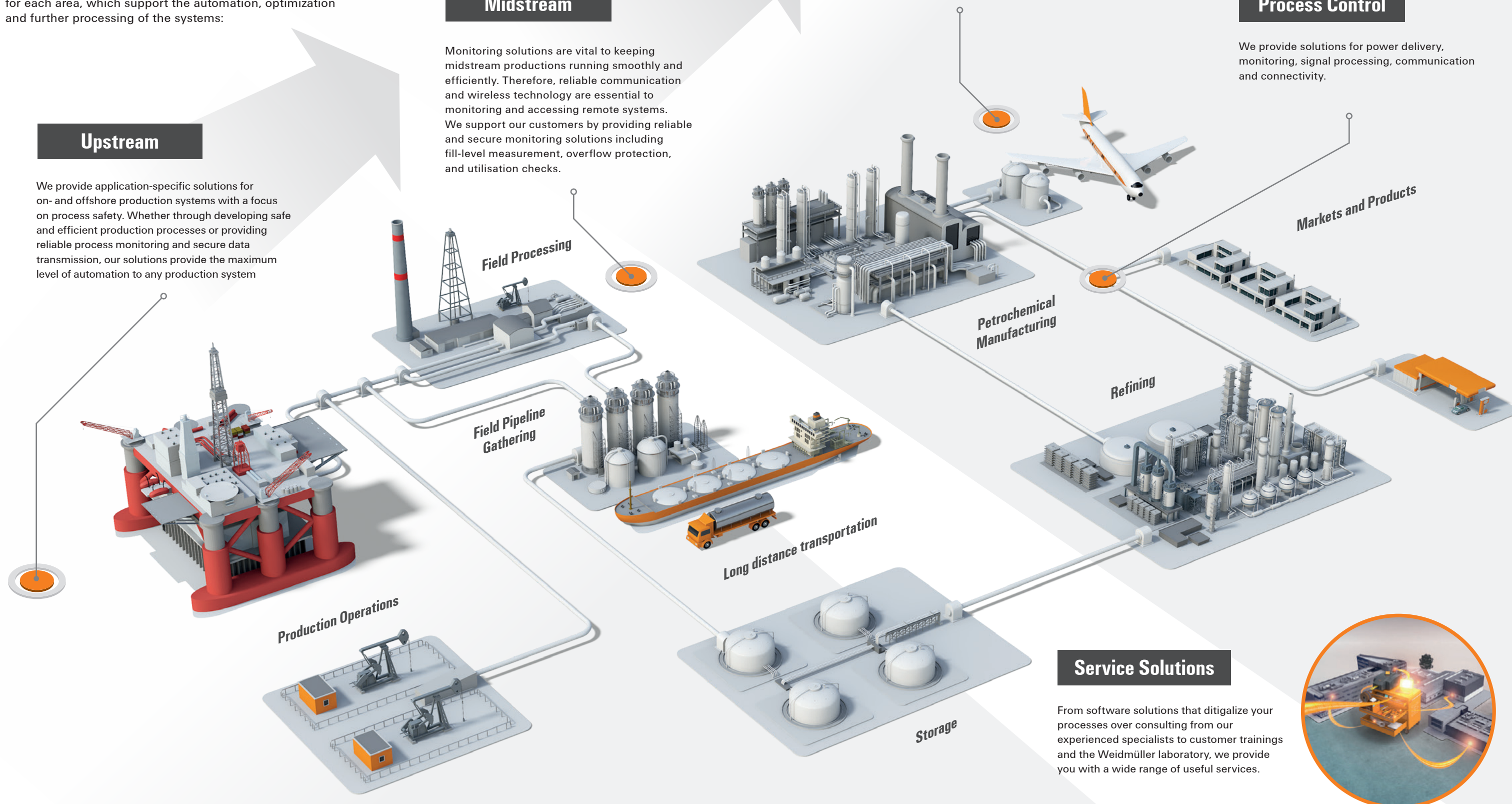
Monitoring solutions are vital to keeping midstream productions running smoothly and efficiently. Therefore, reliable communication and wireless technology are essential to monitoring and accessing remote systems. We support our customers by providing reliable and secure monitoring solutions including fill-level measurement, overflow protection, and utilisation checks.

Downstream

It is imperative that complex processes function reliably when operating downstream applications. Weidmüller offers application-specific enclosure solutions with explosion protection to ensure all processes and components function safely and reliably throughout the downstream process.

Process Control

We provide solutions for power delivery, monitoring, signal processing, communication and connectivity.



Upstream

Market product diversification and rapidly changing technologies are the trends of the process market. Production reliability and environmental compatibility also must be ensured and demonstrated on a continuous basis. In the process industry of the future, complex automation solutions will make it easier to meet environment standards

as well as statutory requirements for energy reduction. The biggest challenges in this area are the ever more stringent requirements of control technology, operation data capture and monitoring. With reliable connections, innovation distribution systems and solutions with a compact design, Weidmüller paves the way towards industry 4.0.

Midstream

Weidmüller's product range includes solutions for connecting, marshalling and converting field signals in process control technology. In terms of data communication, we offer a coordinated range of active and passive industrial Ethernet infrastructure components. Adapted to the relevant automation task, the products cover many communication

requirements in the process environment, for example in gigabit networks or wireless applications. Fuel storage material handling applications are typically located in remote areas and often require instrumentation such as level transmitters. Weidmüller provides connectivity systems for these applications, that include:

Site Monitoring

It is common that upstream production sites are spread of tens of square miles, and so it is imperative to be able to monitor all functions of the plant from production to safety. The Weidmüller Wireless I/O, also known as radio telemetry, enables site control to connect directly to sensor and control signals, and transmit the signal values by radio. The signals are either re-created as similar signals, or output as a data connection – e.g. Ethernet, Profibus or Modbus. Wireless I/O networks can be as simple as two units transferring a small number of signals from one point to another, or they can be complex data-acquisition networks with multiple "master" interfaces to external systems.

Big data under control

In complex process plants, there are many applications where important data is generated, the problem for users is how and what to do with the data. Weidmüller contributes to the processing and evaluation of complex data volumes which delivers real added value for the user by utilizing communications, Cloud Services and a sophisticated Analytics solution. Innovative power supplies, signal inverters, I/O systems, routers, switches and IoT couplers allow Weidmüller to provide secure network data. Weidmüller is taking things to a whole new level in increasing availability, efficiency and process quality in production. Thanks to its Industrial Analytics and u-link Cloud Service, the company now is your strategic partner in Analytics solutions. The combination of application knowledge and Analytics skills even allows Weidmüller to be one step ahead of many established software houses. Real added value is delivered by the interpretation of data analysis results in the context of specific applications, in order to gain relevant business insight. As a result, the customer benefits from an entirely new level of business skills.

Secure networks

Due to the steady increase in networking data and information, a strong trend has evolved where the advantages of Ethernet communication are progressively being used in the area of process automation technology. One of the driving forces is the standardization coming about through the use of Ethernet technology in the office and in the field. You can also benefit from vertical data integration – from the production level, over the office network, through to the Internet. For reasons of security and the efficient management of data traffic between LANs, both LAN switching technologies and industrial routers are becoming more important. In addition to their high-performance security features, our routers offer integrated VPN remote maintenance.

Remote and local control

Harsh environments and hazardous areas, such as in the process industry, place extreme demands on the safety, the robustness and quality of products and devices. We meet these challenges with the Klippon® Control Station, the latest addition to our range of customized enclosure solutions. More than 40 years of expertise have made us market leader in this area with global competence centers. The basis of our enclosure solutions is provided by the usual Weidmüller quality and comprehensive approvals for explosion hazard areas. Based on this, our robust "on-site control station" is available in two standard sizes and with up to four control and display elements. As in every product division, also in the control area we provide a flexible solution to meet your specific needs.

Lightning & Surge Protection for power supply and power distribution

Due to the increasing digitalization and inter-communication of various electronic devices, they are now much more susceptible to transient and high-energy voltage peaks. Power systems in buildings and distributed electrical installations need to be efficiently protected against lightning and surge voltages. This requires a tailor-made protection concept. Weidmüller lightning and surge protection provides a complete protection from power feed-in via distribution through to end the end device and guarantees safety against dangerous surge voltages of any kind.

Wireless I/O for control and monitoring of applications and systems: no need for hard wiring over long distances

Weidmüller Industrial Ethernet components are the perfect link to the data communication between Ethernet enabled devices in process automation. By supporting various topologies and protocols, they can be used in many process applications.

Level control and -management

With many flammable gasses and liquids in close proximity of each other it is crucial to ensure that level and flow control is closely monitored and protected. Weidmüller u-mation paves your way towards Industry 4.0 and the IoT. With our optimally coordinated portfolio of modern automation hardware and innovative engineering and visualization software, you can implement individually scalable digitalization and automation solutions. With u-mation, you optimize all process levels from the sensor to the cloud, for example by implementing flexible control applications or data-based predictive maintenance with industrial analytics. u-mation. More than Automation. Digital Solutions.

Field & Communication wiring

As with any plant, reliable communication is a prerequisite, especially, when the plant is operating over a vast area. Our range of Fieldbus distributors offer free interruption of the bus operation, inbuilt OVP as well as current limiters for branch lines. They can also be used in locations of Hazardous areas.

Downstream

Increasing demand for monitoring and the capture of operating data in process control technology have a knock-on effect for signal transmission and data communication. More and more sensor and actuator signals need to be safeguarded, isolated, converted and switched in process control systems. This is where Weidmüller comes in. Our diverse range of products for distributing and processing signals in process plants provides tailored solutions for the specific requirements of your applications – even in explosive risk zones. The efficiency, reliability

and quality of the control system have a major impact on the productivity of process systems. Upgrades, add-ons and restructuring are therefore undertaken on a regular basis. Weidmüller products help you to design these processes safely, smoothly and as effectively as possible. With our high-quality products, we provide everything from field wiring and patch distributors to signal conservation protective components and industrial Ethernet network infrastructure. We always take account of the robustness of our solutions to ensure perfect connection in the long term.

Overflow protection

In recent years, functional safety has become an important topic especially for the process industry. Top priority is assigned to the protection of people, environment and equipment. The avoidance of malfunctions and faults – or in the worst case the complete shutdown of a plant standstill – contributes decisively to increasing productivity so that functional safety is a key competitive factor. The risk can be minimized with relevant safety technology and protective installations from Weidmüller.

Lightning & Surge Protection for measurement and control

Overvoltage coupling along the conductor path may disturb or destroy sensitive signal inputs. It is important to provide protection in the immediate vicinity of I&C devices. Weidmüller's broad product range for the I&C sector offers products in a 2-piece, pluggable design and modular terminals for tension clamp or screw connection. These products are suitable for both binary and analogue signals as well as for data communication lines.

The VARITECTOR series can be used in applications according to IEC 61643-22 / VDE 0845-3 for classes C1, C2, C3 and D1. The VARITECTOR SPC, SSC and MCZ OVP product families optimally combine electrical and mechanical properties. Size and easy handling play an important role. This surge protection is suited for confined spaces in process automation applications.

Instrument & Control Protection in the field

Enclosures fulfil an important safety function and prove their worth every day, even under the toughest of conditions. All industries have their own specific requirements in terms of enclosure technology – from machine construction through transport and energy engineering to the process industry. At the same time, the enclosures must meet the strict requirements with respect to the necessary international approvals. Our Klippon® Protect enclosure system covers all approvals required for use in industrial and explosive risk zones. It is also so flexible that it allows optimum adaptation to your requirements. Individual services round off our range to provide you with optimize process support.

Utilities

Monitoring and control applications such as voltage and current measurement of transmission and distribution equipment require devices with solid, high quality connections, such as our A Series range of terminals. Our solutions include vibration proof tension clamp and push in connection technology which ensure solid and reliable performance along with intrinsic safety signals conditioners which provide isolation and conversion of signals from Hazardous to safe areas.

Process Control | Distributed Control systems | Master Automation

Maintaining an overview always, even in large process plants. Process plants are full of connections that must be implemented, controlled and optimized. Damage to, or even the complete outage of process technology systems, can have devastating consequences for people, property and the environment. System operators face the challenges of evaluating and reducing such risks. Weidmüller assist you in this with our specialized knowledge and solutions,

giving you the highest priority to explosion protection and process reliability. Space savings are of the utmost importance and our marshalling terminal blocks allow over 1,700 signals to be connected over an electrical cabinet width of one meter. And with our industrial Ethernet components, the networking and configuration of technical automation components can be made considerably simpler and more effective. Our top priority is to provide the best connections at all time.

Power Delivery Solutions

High-end power supplies must perform efficiently and reliably, even in challenging industrial environments. This requires high power reserves, a long service life and optimal protection against overvoltage, vibration and extreme temperature conditions. New DCL technology gives PROtop an outstanding dynamic range. This can be used for the reliable triggering of circuit breakers or for powerful motor starts.

Analogue signal processing

Automation process's require a high degree of processing analogue signals, to constantly maintain or reach defined conditions. This is particularly significant for process automation applications. Standardized electrical signals are typically used for process engineering. Analogue standardized currents / voltage 0(4)...20 mA/ 0...10 V have established themselves as physical measurement and control variables.

Migration of DCS systems

Process plants need to continuously remain efficient, and so upgrades need to ensure the minimum amount of downtime as possible. A migration or an update of the PLC system become obligatory when these no longer fulfil the requirements for speed, reliability and scalability. If system links, support or spare parts availability are restricted, a system update is also required. When replacing PLC/DCS systems it is vital to avoid cabling errors and to keep plant downtimes to a minimum during the migration process.

With our configurable PLC migration interfaces and adapters, we enable you to safely exchange the control level by simply replacing the old control with the new one. Adaptations or changes to the infrastructure can be carried out quickly and simply without having to intervene in the field wiring. This reduces the time needed for the PLC migration by several weeks to a few hours – including the system test. As a result, plants can be back to normal operation after the shortest possible downtime.

DCS marshalling

Increasingly complex requirements for automation processes and increasing demands in terms of monitoring and recording operational data have led to an ever-increasing number of sensors in the field for process technology. This means that space and time-saving wiring of signals in DCS marshalling, with screw and screwless technology, offering equal levels of safety on the resulting connections panels in the process and energy generation industries is becoming increasingly demanding. Our modular terminal blocks for DCS marshalling enable extremely compact yet clear panel design. The additional signals for automation can be easily connected and processed.

Service Solutions

Connectivity is the control center for constantly evolving equipment and process plants. Through early integration in the planning process, Weidmüller engineering solutions simplify your product development. To aid the processes along the value chain, Weidmüller offers various software solutions to your engineering workflow. With the Weidmüller Configurator, mounting

rails and component modules can be assembled and directly ordered. The M-Print PRO software supports the individual labelling of the project and its ordering. The interface software M-Print PRO eCAD ensures the optimal interaction between disciplines. Various CAE Systems are compatible with our solutions like EPLAN, Zuken E³.series or WSCAD.

Self-contained engineering

Engineering processes must be completed with ever greater speed, precision and efficiency. This requires intelligent tools that provide optimum support for complex planning processes. The Weidmüller Configurator is a software solution for selecting, configuring and ordering Weidmüller components as specific solutions. The tool supports continuous engineering workflows from planning with E-CAD systems through to documentation.

Workplace solutions

We are sure you will be won over by our marking system. We don't just offer you a complete, convenient process chain from data entry to ready-for-use markers for your individual cabinet configuration. We offer you marking solutions that are already geared towards the future requirements of progressive automation. This means you are always one step ahead.

Consulting and engineering support for your individual solution

Expertise in automation and connectivity – networked all over the world: our experienced industrial managers near you can resolve the problems you encounter every day by working with you. You can benefit from comprehensive consulting and engineering support from professional advisors.

Quality, performance and safety for your products

Our laboratory has left nothing to chance for more than six decades, faced with stiff international competition, you demand high safety, quality and performance standards for your products. Being the central interface to your product development operations, our laboratory is your constant companion throughout all phases of a new innovation.

Technology and application training

Increasingly complex systems and the progressive digitalization require continuous development – not only of technologies and solutions, but also of the people behind it. For this reason, we at Weidmüller are intensively engaged with qualification. Take advantage of our diverse training courses to refresh and to further develop your skills and knowledge. Our seminars are modular and can be customized on request. The training takes place in our own Academy or upon request also locally at your site. Free webinars round off our offer. You are interested in a technology, application or product training? **Just talk to us!**

Ensuring a smooth & effective process flow

The extraction and refinement of oil and gas are complex processes which require specific technologies. Extensive, highly complex systems need to function reliably and economically under extreme environmental conditions. Depending on the application site, sensitive electronic components on the panel need to be protected against heat, cold, humidity, temperature fluctuations, corrosion and UV radiation. Often, there are maximum requirements

in terms of explosion protection as well. Modularity and a maximum level of automation and availability of systems are increasingly important factors in this regard. We can support you by providing application-specific solutions where the focus is on process safety. These include particularly robust components with all the necessary approvals for demanding Ex areas such as:



Secure data transmission between measuring points and central control room



Fill-level measurement, overflow protection and utilization check



Safety-related switch-off of plant components



Increased efficiency of production processes



Application-specific enclosure solutions with explosion protection

Weidmüller – Partner in Industrial Connectivity.

As a market leader we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and useful solutions for their individual needs. Together we set standards in Industrial Connectivity.

We cannot guarantee that there are no mistakes in the publications or software provided by us to the customer for the purpose of making orders. We try our best to quickly correct errors in our printed media. All orders are based on our general terms of delivery, which can be reviewed on the websites of our group companies where you place your order. On demand we can also send the general terms of delivery to you.

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