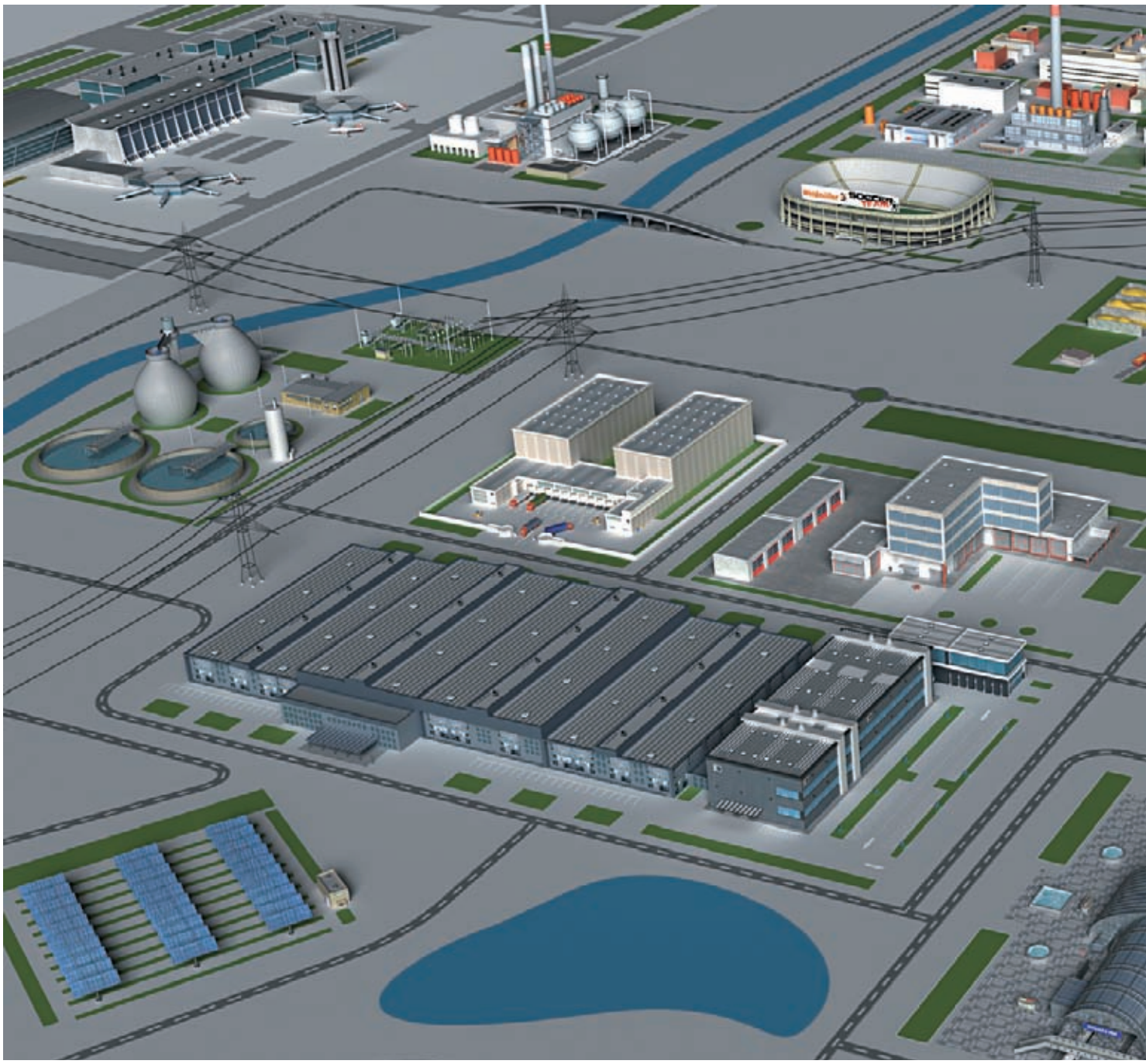
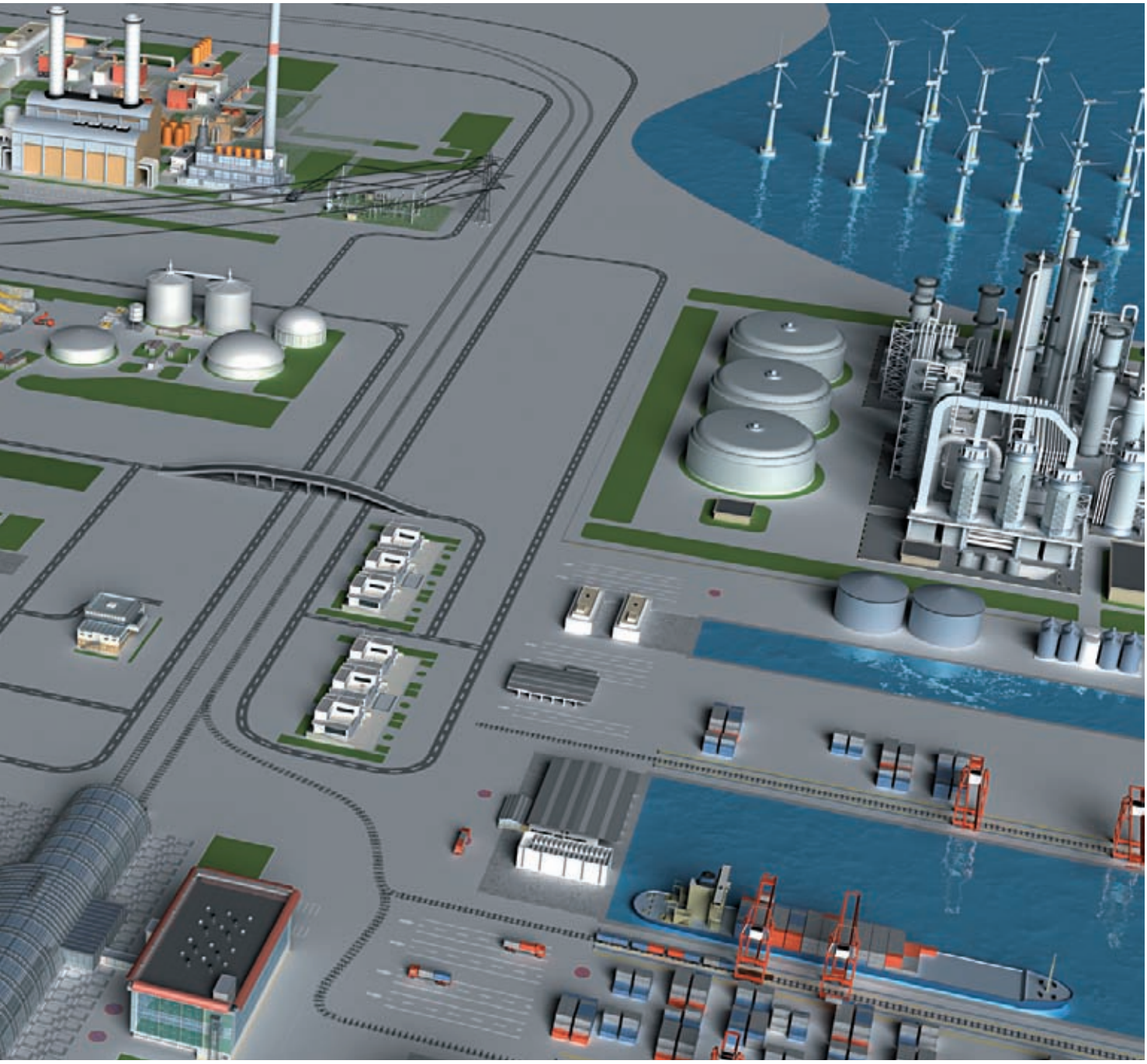
Industrial Ethernet

Intended for use in Industrial Ethernet



The trend to network industrial plant components using Ethernet protocols was already apparent several years ago. Ethernet communication is now well established in all market segments; automotive, general machine construction, process industry, transportation as well in the energy branch. The requirements of the different branches differ in terms of the protocols, environmental conditions, certifications and standardisations. As well as being a leading provider of industrial connection and network products, Weidmüller covers these differing requirements with a comprehensive and high-quality product range of active and passive components for Ethernet communications.



The basic requirements of most of these branches are high reliability, availability and safeguarding against failure. These are met by extremely high MTBF times of the active network components. Maximum reliability and simple operation is ensured through Weidmüller's high-quality ***STEADY****TEC*® connector system.

Together Weidmüller's network components create a complete communications infrastructure for industrial applications in machine construction, process and plant engineering and energy.

Automotive

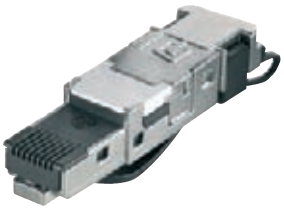
Car manufacturers in AIDA (the German car manufacturers' automation initiative) are the driver behind the use of Industrial Ethernet in the manufacturing sector, as they clearly prefer the use of PROFINET for communication between machines and equipment parts. To make the most savings in modern communications structures, Industrial Ethernet in the automotive industry is homogeneous from the corporate management level down to the field level.

New production plants in North American car production are also being exclusively automated using Industrial Ethernet. Here the Real-Time Ethernet protocol Ethernet/IP is used. This, in the same way as PROFINET and other protocols, means there are different requirements for the connector systems used and the active network devices.

Extremely harsh environmental conditions – such as may be found where industrial robotics are used, for example – place high requirements on the components used. Cabling needs to be torsion resistant and there are increased EMC demands placed on plug-in connectors and active devices. For these application fields, Weidmüller offers a complete product range consisting of copper and fibre-optic connectors and passive hand-tools that are specifically designed for the requirements of cabling robotic systems.

The use of active devices with powerful redundancy mechanisms is needed to prevent network failures. Weidmüller's managed switches meet these requirements with their particularly fast recovery time of under 20 ms when an error occurs.

General machine construction



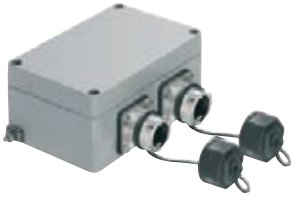
Important parts of communications in machinery and device construction are networking machine segments and device parts and connecting them to the higher-level office network. Many serial devices are connected to the Ethernet infrastructure to protect investments and because of the various different communication protocols in use. Weidmüller offers active components for this which convert the protocols. By simply integrating devices with serial interfaces, you get protection for your investments in existing automation components.

The volume of data in networks is steadily rising with the applications used, for example with camera-based quality control. Weidmüller easily meets these increased demands with its product range of high-performance Gigabit switches and plug-in connectors capable of 10 Gigabit transfer.

The extensive plug-in connector range also meets the higher demands in terms of EMC as well as shock, vibration and temperature resistance and facilitates easy on-site assembly.

Dragline cable compatible connection cables from Weidmüller are used on moving parts of complex machines. Hard to reach areas can be covered using the wireless modules that are available.

Process



Weidmüller's network components for the process industry allow their use in explosion hazard areas with their certification - Class 1 Div. 2 and ATEX. The active components have high fault-tolerance and ensure high system availability with redundancy mechanisms like trunking and ring-redundancy as well as RSTP.

Long distances can be bridged using fibre-optic media in large process plants. There are requirements placed on the protection categories of the individual components as these are found in the field. The harsh environments in process plants are characterised by high temperature variations, vibrations, rain, dust as well as electromagnetic influences. Weidmüller's active and passive Ethernet components withstand these influences.

It is particularly important to make sure the communication between various parts of the plant is secure and structured in security relevant processing areas. Weidmüller's Ethernet switches support network management and security functions like IGMP Snooping, IEEE 802.1X, QoS and VLAN.

With this the devices form a secure and efficient bridge to the office communication and from there to the higher IT systems.