Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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CATALOGUE 9

2011|2012

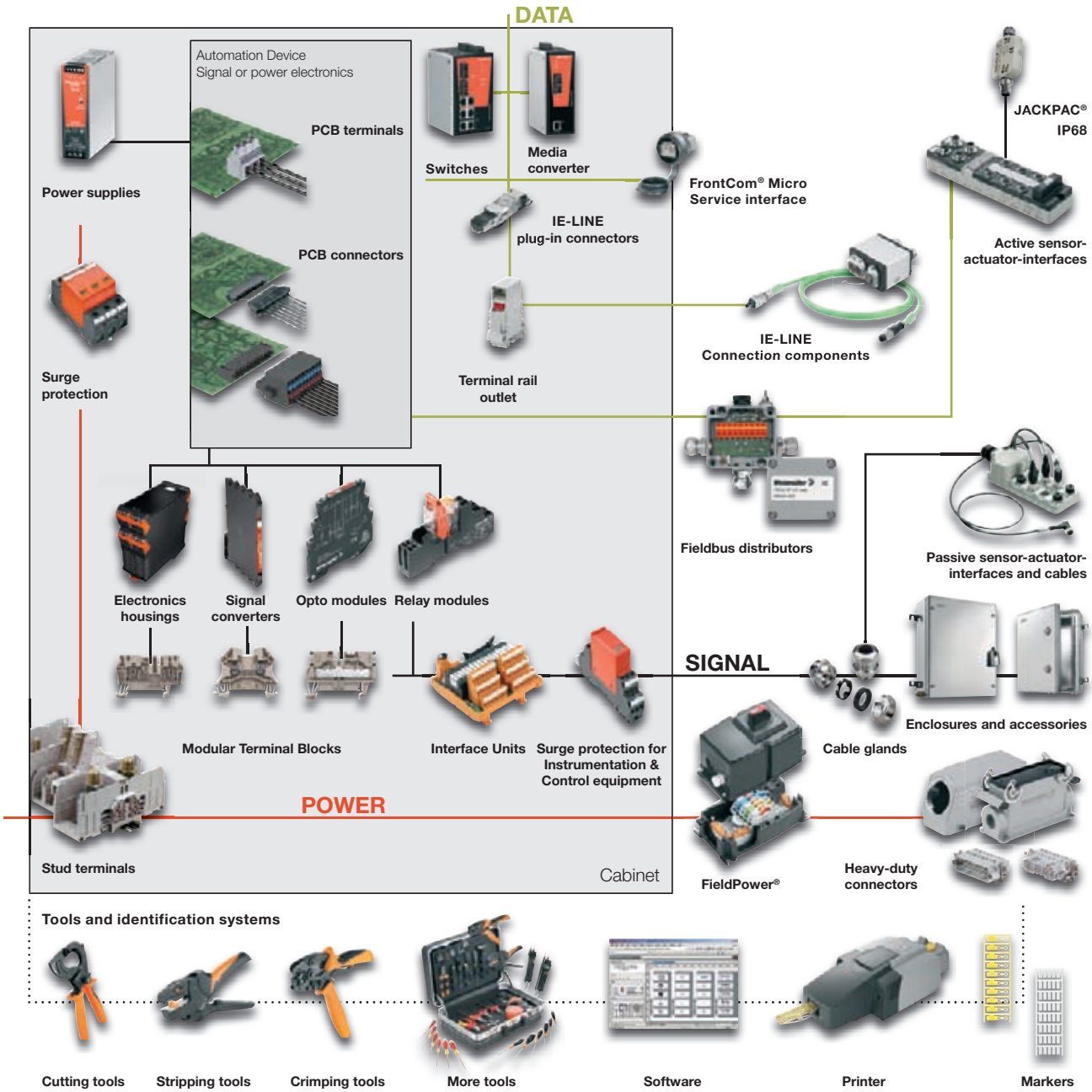
Industrial Ethernet

Catalogue

Weidmüller

Product Portfolio

Weidmüller is a leading international provider of solutions for electrical connectivity, transmission and conditioning of power, signal and data in industrial environments. The company with headquarters in Detmold/Germany develops, produces and sells products in the field of electrical connectivity and electronics all over the world.
www.power-signal-data.com



All the catalogues at a glance

		Order No.
Catalog 1	Modular Terminal Blocks	**5661400000**
Catalog 2	PCB Terminals, PCB Connectors and Housings for Electronics	**1250030000**
Catalog 3	RockStar® – Heavy Duty Connectors	**5664240000**
Catalog 4.1	Electronics – Analogue Signal Conditioning	**1203510000**
Catalog 4.2	Electronics – Relays and Optos	**1282330000**
Catalog 4.3	Electronics – Power Supplies	**1282390000**
Catalog 4.4	Electronics – Surge protection	**1271290000**

		Order No.
Catalog 4.5	Electronics – Interface units and PLC solutions	**1252080000**
Catalog 5	Enclosures and Cable Glands	**1274520000**
Catalog 6	Tools	**1161520000**
Catalog 7	Identification systems	**1125590000**
Catalog 8	Sensor Actuator Interface	**1235620000**
Catalog 9	Industrial Ethernet	**1274570000**
Product information	FieldPower® – decentralised power distribution	**1229860000**

CATALOGUE 9

Industrial Ethernet

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RM-KIT
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PROFINET and SERCOS III cabling solutions
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IP 20 mounting rail outlets
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General tools
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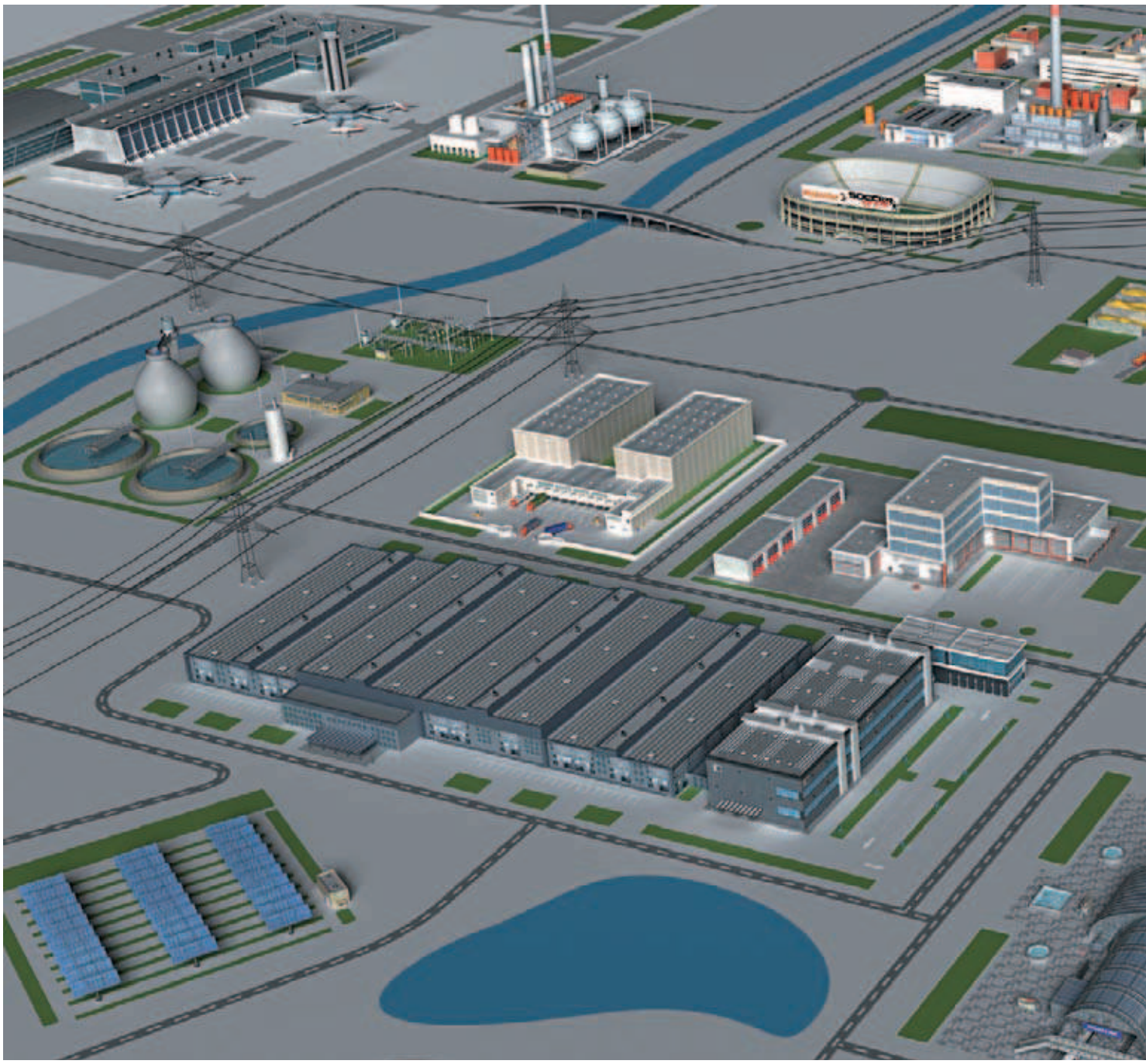
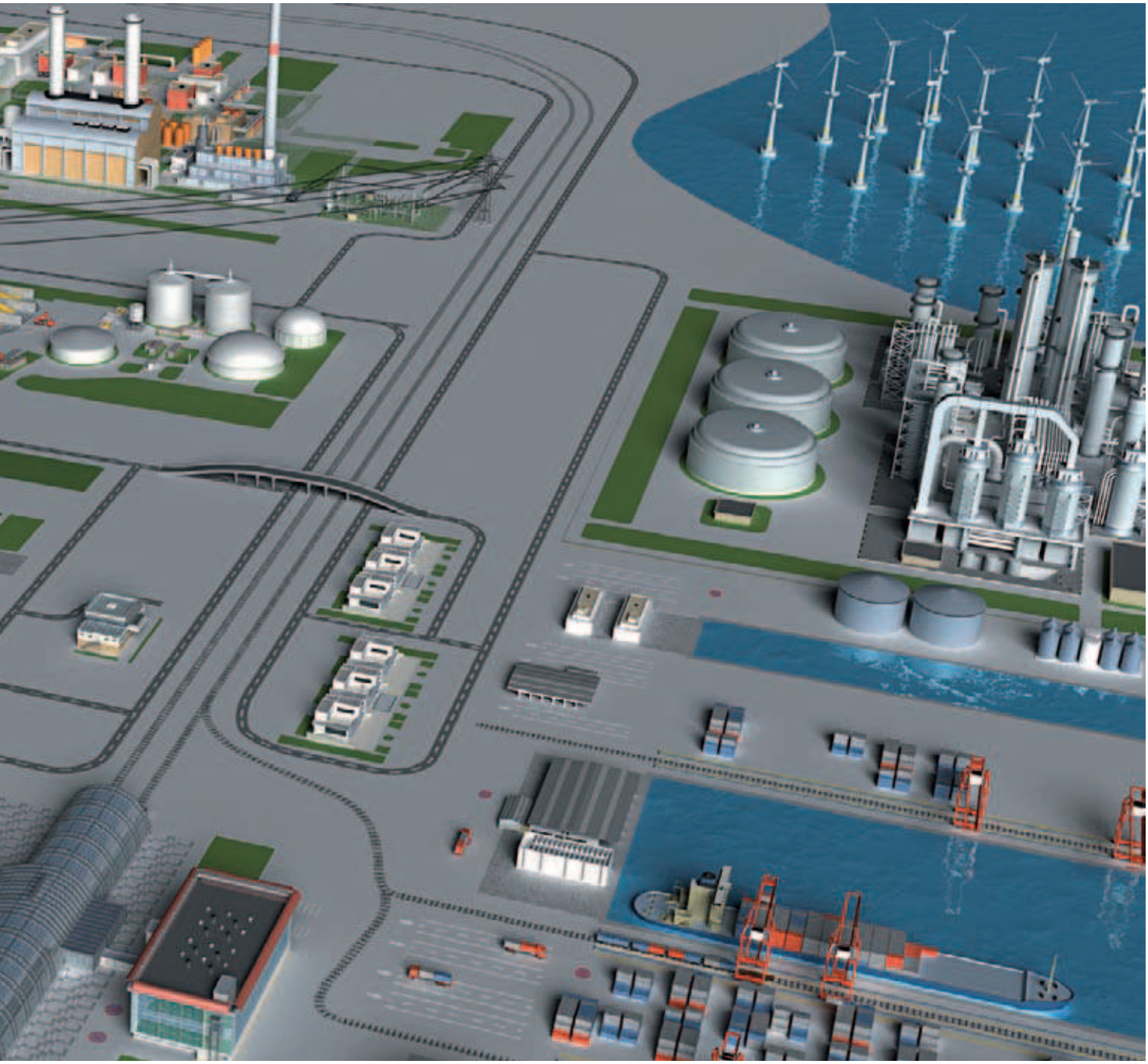
Industrial Ethernet

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

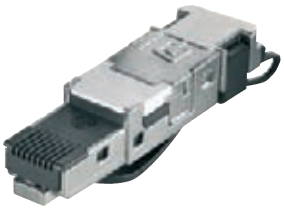
Car manufacturers in AIDA (the German car manufacturers' automation initiative) are the driver behind the use of Industrial Ethernet in the manufacturing sector, as they clearly prefer the use of PROFINET for communication between machines and equipment parts. To make the most savings in modern communications 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



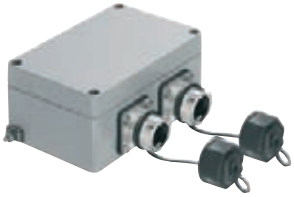
Important parts of communications in machinery and device construction are networking machine segments and device parts and connecting them to the higher-level office network. Many serial devices are connected to the Ethernet infrastructure to protect investments and because of the various different 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.

Active components

Active components

Active components

Ethernet technology is an established standard in office communication and has existed for many years. Without it, effective communications between the different participants like PCs, printers, data servers etc. would no longer be possible.

In recent years this technology has been expanded under the term Industrial Ethernet and implemented in automation systems. The common goal of both manufacturer and user is to make networking automation system components easier and more effective. To make process data and diagnostic functions device-independent when exchanged between network participants, all equipment in a plant should be linked with just one bus technology.

Industrial applications, however, differ significantly from office applications. There are normally much higher demands placed on the communication devices in the industrial setting. These include, as examples:

- Installation conditions
- Environmental conditions
- Protocols
- Approvals

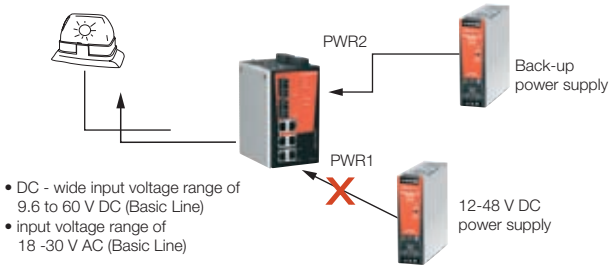
Weidmüller's Industrial Ethernet components meet all of these requirements as they have the properties listed below:

- Reliable (redundant) power supply for uninterrupted network operation
- Resistance to extreme temperatures
- Immune to electromagnetically caused malfunctions
- Insensitive to vibration, shock and corrosive environments
- Conformity with various certification standards
- Longevity

These rugged devices can therefore be used world-wide in different industries and applications.

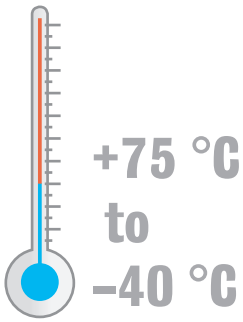
Stable and versatile power supply inputs for industrial applications

The redundant voltage inputs provide reliable functionality of the whole system. If a power supply fails, the redundant power source takes over the energy supply. All of Weidmüller's Industrial Ethernet components have a wide input voltage range of at least 12 to 48 V DC (Basic Line switches 9.6 to 60 V DC). They can also work with large fluctuations in voltage. As examples, with a rated 48 V DC input, a fluctuation of +20 % is acceptable and in one of 12 V DC a voltage drop of up to 20 % present no problems for the attached devices.



Suitable for use in extreme temperature environments

Industrial environments often present extreme temperature conditions. This means that devices are needed which can operate under extreme temperature fluctuations flawlessly. Therefore all Industrial Ethernet components undergo a burn-in test over several hours to ensure they function properly at the guaranteed temperature ranges (e.g. -40 °C to +75 °C).



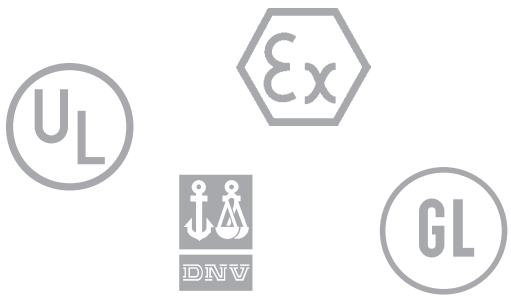
Outstanding immunity to electromagnetic interference

The sturdy design of Weidmüller's Industrial Ethernet components also includes excellent electromagnetic compatibility and fully complies with the requirements of the EN50121-4, DNV and IEC 61000 standards.

Certified to industry standards

Extensive certifications confirm the reliability of Weidmüller's Industrial Ethernet components

- UL508 and UL60950-1
- Class I, Division2 / ATEX Zone 2 for safe use in explosive hazard areas
- DNV/GL approval for use in maritime settings



Durability and reliability

- Many of the Weidmüller Ethernet components have relay outputs. These can be used for alarm signal notification (e.g. power failures or port problems). This means that in emergencies it is possible to react quickly to any failures.
- Weidmüller's unmanaged switches are protected from receiving too many broadcast packets. The switches discard broadcast or multicast packets if they exceed a threshold level in a given time. They then receive further broadcast and multicast packets after a given time has past, until the threshold level is reached again.
- All Weidmüller active Industrial Ethernet components are designed for a long in-service life, this can be seen from the high MTBF value. Weidmüller also guarantees its Industrial Ethernet components for a period of five years.

Active components

Basic Line

Weidmüller's Basic Line series consists of unmanaged Plug & Play switches in a rugged IP30 rated aluminium housing. The devices are available with Fast Ethernet and Gigabit Ethernet and provide an economical solution for Industrial Ethernet ports networks. One model is equipped with Fast Ethernet and Power-over-Ethernet ports. All devices have been developed for applications in harsh industrial environments and have international approvals such as CE, cULus, Class I Div. 2 / Atex and DNV / GL and are thus international applicable for different applications.

- Plug & Play switches in a rugged aluminium housing (IP30)
- Compact design
- Cost efficient entry-level switches
- Fast Ethernet variants with 5 and 8 Ports
- Versions with copper or fibre-optic interface (multimode and single-mode)
- 5 port Full-Gigabit Plug & Play Switch
- Power-over-Ethernet switch with 6 Fast Ethernet ports, thereof 4 PoE+ ports
- Approvals: cULus, Class I Div. 2 / Atex, DNV / GL

Value Line

Weidmüller's Value Line series consists of unmanaged and managed switches in a high quality IP30 rated metal housing. The devices are available with Fast Ethernet and Gigabit Ethernet ports. Managed switches of the Value Line support a variety of useful management functions, such as fast ring redundancy, VLAN, QoS, RMON, bandwidth management, port mirroring and warning by email message or relay. The ring redundancy can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the switches.

- Unmanaged Plug & Play switches in a high quality metal housing (IP30)
- Price-sensitive mid-range class
- Managed switches for entry into configurable network infrastructure
- Unmanaged 8 port Full-Gigabit switches
- Approvals: cULus, Class I Div. 2 / Atex, DNV / GL

Premium Line

Weidmüller's Premium Line series completes the switch range for the high-end sector and is particularly suitable for complex network solutions with high traffic levels. The devices are available in different versions - number of ports, transmission rate (Fast and Gigabit Ethernet) and the type of connection (copper and fibre-optic).
With their advanced ring redundancy technology (recovery time ≤ 20 ms), these devices increase the reliability and availability of your industrial network. The optional to use SFP transceivers offer a high degree of flexibility and the Gigabit variants allows the use in networks with high traffic loads also.

- Managed Fast Ethernet variants in a high quality metal housing (IP30)
- Managed Power-over-Ethernet switch with 6 Fast Ethernet ports, thereof 4 PoE+ ports
- Variants with 10 or 18 ports and Gigabit uplink ports
- Full-Gigabit switch with 9 ports
- Supports all standard protocols in TCP/IP-based industrial networks (e.g. Ethernet/IP, Modbus/TCP)
- Built-in redundancy mechanisms (recovery time ≤ 20 ms) for increased reliability in network ring structures
- Approvals: cULus, Class I Div. 2 / Atex, DNV / GL

Switches – quick-finder

Order No.	Type	Ports total	2	5		6	8				
		Ports copper	1	5	4	6	8	5	6	6	7
		Ports fibre	1		1			3	2	3	1
		Ports SFP									
Industrial Ethernet Switches											
1240840000	IE-SW-BL05-5TX			●							
1240850000	IE-SW-BL05T-5TX			●							
1240870000	IE-SW-BL05-4TX-1SCS				●						
1240880000	IE-SW-BL05-4TX-1ST				●						
1240890000	IE-SW-BL05-4TX-1SC				●						
1240900000	IE-SW-BL08-8TX						●				
1240910000	IE-SW-BL08-6TX-2SC								●		
1240920000	IE-SW-BL08T-6TX-2SC								●		
1240930000	IE-SW-BL08-6TX-2ST								●		
1240950000	IE-SW-BL08-7TX-1SCS										●
1241250000	IE-SW-BL05-5GT		5 GE								
1240980000	IE-SW-VL09T-6TX-3SC									●	
1241000000	IE-SW-VL16-16TX										
1241030000	IE-SW-VL16-14TX-2SC										
1241050000	IE-SW-VL16-14TX-2ST										
1240940000	IE-SW-VL08MT-8TX						●				
1240970000	IE-SW-VL08MT-5TX-3SC							●			
1240990000	IE-SW-VL08MT-6TX-2ST								●		
1241020000	IE-SW-VL08MT-6TX-2SCS								●		
1241270000	IE-SW-VL08-8GT						8 GE				
1241280000	IE-SW-VL08-6GT-2GS								6 GE 2 GEC		
1241040000	IE-SW-PL08M-8TX						●				
1241070000	IE-SW-PL08M-6TX-2SC								●		
1241080000	IE-SW-PL08M-6TX-2ST								●		
1241090000	IE-SW-PL08M-6TX-2SCS								●		
1241100000	IE-SW-PL16M-16TX										
1241120000	IE-SW-PL16M-14TX-2SC										
1241130000	IE-SW-PL16M-14TX-2ST										
1241290000	IE-SW-PL10M-3GT-7TX										
1241300000	IE-SW-PL10M-1GT-2GS-7TX										
1241320000	IE-SW-PL18M-2GC-16TX										
1241330000	IE-SW-PL18M-2GC-14TX2SC										
1241340000	IE-SW-PL18M-2GC14TX2ST										
1241350000	IE-SW-PL18M-2GC14TX2SCS										
1241370000	IE-SW-PL09M-5GC-4GT										
Power over Ethernet Switches											
1241380000	IE-SW-BL06-2TX-4PoE					4 PoE+					
1241390000	IE-SW-PL06M-2TX-4PoE					4 PoE+					

FE = Fast Ethernet
GE = Gigabit Ethernet
GEC = Gigabit Ethernet Combo Ports
PoE+ = Power over Ethernet+

9	10		16		18		Unmanaged	Managed	Temperature	Further characteristics	Page
4	10	8	16	14	16	14					
		2		2		2					
5					2	2					
							●		-10 … +60 °C		B.9
							●		-40 … +75 °C		B.9
							●		-10 … +60 °C	singlemode	B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C		B.9
							●		-40 … +75 °C		B.9
							●		-10 … +60 °C		B.9
							●		-10 … +60 °C	singlemode	B.9
							●		0 … +60 °C		B.11
							●		-40 … +75 °C		B.10
			●				●		0 … +60 °C		B.10
				●			●		0 … +60 °C		B.10
				●			●		0 … +60 °C		B.10
								●	-40 … +75 °C		B.17
								●	-40 … +75 °C		B.17
								●	-40 … +75 °C		B.17
								●	-40 … +75 °C	singlemode	B.17
							●		0 … +60 °C		B.11
							●		0 … +60 °C		B.11
								●	0 … +60 °C		B.18
								●	0 … +60 °C		B.18
								●	0 … +60 °C		B.18
								●	0 … +60 °C	singlemode	B.18
			●					●	0 … +60 °C		B.18
				●				●	0 … +60 °C		B.18
				●				●	0 … +60 °C		B.18
	3 GE 7 FE							●	0 … +60 °C		B.19
		1 GE 2 GEC 7 FE						●	0 … +60 °C		B.19
					2 GEC 16 FE			●	0 … +60 °C		B.20
						2 GEC 16 FE		●	0 … +60 °C		B.20
						2 GEC 16 FE		●	0 … +60 °C		B.20
						2 GEC 16 FE		●	0 … +60 °C	singlemode	B.20
5 GEC 4 GE								●	0 … +60 °C		B.21
							●		0 … +60 °C	PoE+	B.23
								●	0 … +60 °C	PoE+	B.24

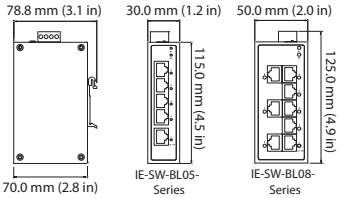
Unmanaged Switches

Switches are the basic coupling elements in Ethernet networks. They connect the Ethernet participants together. In an Ethernet network the communication basically originates from the participants. The switches connect the participants together and enable the communication. Unmanaged switches are the simplest active network component. They do not need to be configured and are therefore very flexible. They use the basic standard protocols like auto-negotiation, auto-crossing, and flow-control and can automatically adjust to the different transmission speeds or connector wiring.

Unmanaged switches are protocol transparent. Each port on the switch creates an individual collision domain. The use of twisted-pair cabling with an RJ45 interface or fibre-optic cable based on the IEEE 802.3 specification interfaces are supported by all Weidmüller switches.

Unmanaged Fast Ethernet Switches

- 10/100BaseT(X) (RJ45 connector), 100BaseFX (multi/singlemode, SC or ST connector)
- Redundant dual 12/24/48 V DC, 18 to 30 V AC power inputs
- IP30 aluminum housing
- Rugged hardware design well suited for hazardous locations (Class I Div. 2 /ATEX) and maritime environments (DNV/GL)
- -40 to 75 °C operating temperature range (T models)



Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	1 K
Packet Buffer Size	512 Kbit
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector, multimode, singlemode)
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	Enable/Disable broadcast storm protection
LED Indicators	Power, 10/100M (TP port), 100M (fiber port)
Optical Fiber	

	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)	40 km (9/125 µm singlemode cable)
Saturation	-6 dBm	-3 dBm

Power Requirements	
Input Voltage	12/24/48 V DC (9.6 to 60 V DC), 18 to 30 V AC (47 to 63 Hz), redundant dual inputs
Input Current	IE SW BL05 5TX: 0.1 A @ 24 V IE SW BL05 SC/ST/SCS: 0.11 A @ 24 V IE SW BL08 8TX: 0.13 A @ 24 V IE SW BL08 2SC/2ST: 0.22 A @ 24 V IE SW BL08 SCS: 0.17 A @ 24 V
Overload Current Protection	1.1 A
Connection	1 removable 4-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Aluminum, IP30 protection
Dimensions	IIE-SW-BL05-Series: 30 x 115 x 70 mm (1.18 x 4.52 x 2.76 in) IE-SW-BL08-Series: 50 x 115 x 70 mm (1.96 x 4.52 x 2.76 in)
Weight	IE-SW-BL05-5TX: 175 g IE-SW-BL08-8TX: 275 g
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60 °C (14 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)

Environmental Limits	
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8; EN61000-4-11
Maritime	DNV, GL (IE-SW-BL05-4TX-1SCS/SC/ST: pending)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	425,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
5 * RJ45	IE-SW-BL05-5TX	-10 to +60 °C	**1240840000**
	IE-SW-BL05T-5TX	-40 to +75 °C	**1240850000**
4 * RJ45, 1 * SC-Multimode	IE-SW-BL05-4TX-1SC [1)]	-10 to +60 °C	**1240890000**
4 * RJ45, 1 * ST-Multimode	IE-SW-BL05-4TX-1ST [1)]	-10 to +60 °C	**1240880000**
4 * RJ45, 1 * SC-Singlemode	IE-SW-BL05-4TX-1SCS [1)]	-10 to +60 °C	**1240870000**
8 * RJ45	IE-SW-BL08-8TX [1)]	-10 to +60 °C	**1240900000**
6 * RJ45, 2 * SC-Multimode	IE-SW-BL08-6TX-2SC	-10 to +60 °C	**1240910000**
	IE-SW-BL08T-6TX-2SC	-40 to +75 °C	**1240920000**
6 * RJ45, 2 * ST-Multimode	IE-SW-BL08-6TX-2ST [1)]	-10 to +60 °C	**1240930000**
7 * RJ45, 1 * SC-Singlemode	IE-SW-BL08-7TX-1SCS [1)]	-10 to +60 °C	**1240950000**

[1)] Model with extended operating temperature -40 to +75 °C on request

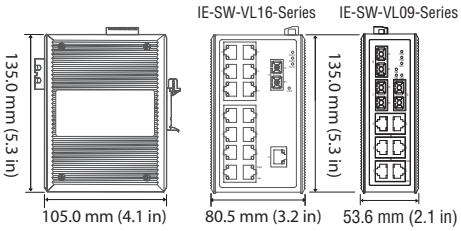
Accessories

	Model Type	Order No.
19'' Rack Mounting Kit	RM-KIT	**1241440000**

Unmanaged Switches Fast Ethernet – Value Line

Unmanaged Fast Ethernet Switches

- Redundant dual 24 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Transparent transmission of VLAN tagged packets
- -40 to 75 °C operating temperature range (T models)



Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	1 K (IE-SW-VL09...Series), 4 K (IE-SW-VL16...Series)
Packet Buffer Size	512 Kbit (IE-SW-VL09...Series), 1.5 Mbit (IE-SW-VL16...Series)
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector)
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	Port break alarm mask
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port)
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC
Optical Fiber	
	100BaseFX multimode
Wavelength	1300 nm
Max. TX	-10 dBm
Min. TX	-20 dBm
RX Sensitivity	-32 dBm
Link Budget	12 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)
Saturation	-6 dBm
Power Requirements	
Input Voltage	IE-SW-VL09...16-Ports: 24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-VL09T-6TX-3SC: 0.31 A @ 24 V IE-SW-VL16-16TX: 0.27 A @ 24 V IE-SW-VL16 SC/ST: 0.44 A @ 24 V
Power Requirements	
Overload Current Protection	IE-SW-VL09/16...Series: 1.6 A
Connection	1 removable 6-pin terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	IE-SW-VL09...Series: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) IE-SW-VL16...Series: 80.5 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight	IE-SW-VL09: 630 g IE-SW-VL16: 1140g

Physical Characteristics	
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	IE-SW-VL09...Series: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1 IE-SW-VL16...Series: UL508, UL60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3;
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	IE-SW-VL09...Series: 396,000 hrs IE-SW-VL16...Series: 257,000 hrs
Database	MIL-HDBK-217F, GB 25 °C
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
16 * RJ45	IE-SW-VL16-16TX [1]	0 to 60 °C	**1241000000**
6 * RJ45, 3 * SC-Multimode	IE-SW-VL09T-6TX-3SC	-40 to +75 °C	**1240980000**
14 * RJ45, 2 * SC-Multimode	IE-SW-VL16-14TX-2SC [1]	0 to 60 °C	**1241030000**
14 * RJ45, 2 * ST-Multimode	IE-SW-VL16-14TX-2ST [1]	0 to 60 °C	**1241050000**

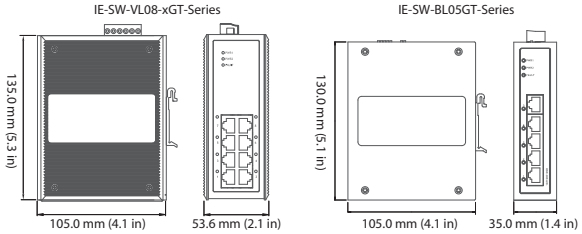
[1] Model with extended operating temperature -40 to +75 °C on request

Accessories

	Model Type	Order No.
19'' Rack Mounting Kit	RM-KIT	**1241440000**

Unmanaged Gigabit Ethernet Switches

- Fibre-optic options for extending distance and electrical noise immunity
- Redundant dual 12/24/48 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Supports jumbo frame transmission (up to 9.6 KB)



Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	8 K
Packet Buffer Size	1088 Kbit (IE-SW-BL05-5GT), 1408 Kbit (IE-SW-VL08-xGT)
Interface	
Fiber Ports	100/1000BaseSFP slot (IE-SW-VL08-6GT-2GS)
RJ45 Ports	10/100/1000BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	One for port break alarm, one for Enable/ Disable broadcast storm protection
LED Indicators	PWR1, PWR2, FAULT, 10/100/1000M
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC
Power Requirements	
Input Voltage	12/24/48 V DC (9.6 to 60 V DC), redundant dual inputs
Input Current	IE-SW-BL05-5GT: 0.20 A @ 24 V IE-SW-VL08-8GT: 0.32 A @ 24 V IE-SW-VL08-6GT-2GS: 0.34 A @ 24 V
Connection	1 removable 6-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	IE-SW-BL05-5GT: 35 x 130 x 105 mm (1.37 x 5.12 x 4.13 in) IE-SW-VL08-xGT: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	IE-SW-BL05-5GT: 290 g IE-SW-VL08-xGT: 630 g
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F) (on request)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A

Regulatory Approvals	
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	325,000 hrs (IE-SW-VL08-xGT series)
Database	Telcordia (Bellcore), GB (IE-SW-VL08-xGT series)
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Model Type	Operating Temperature	Order No.
5 * RJ45 10/100/1000BaseT(X)	IE-SW-BL05-5GT	0 to 60 °C	**1241250000**
8 * RJ45 10/100/1000BaseT(X)	IE-SW-VL08-8GT	0 to 60 °C	**1241270000**
6 * RJ45 10/100/1000BaseT(X), 2 Combo Ports (10/100/1000 BaseT(X) or 100/1000BaseSFP)	IE-SW-VL08-6GT-2GS	0 to 60 °C	**1241280000**
Models with extended operating temperature -40 to +75 °C on request			

Accessories

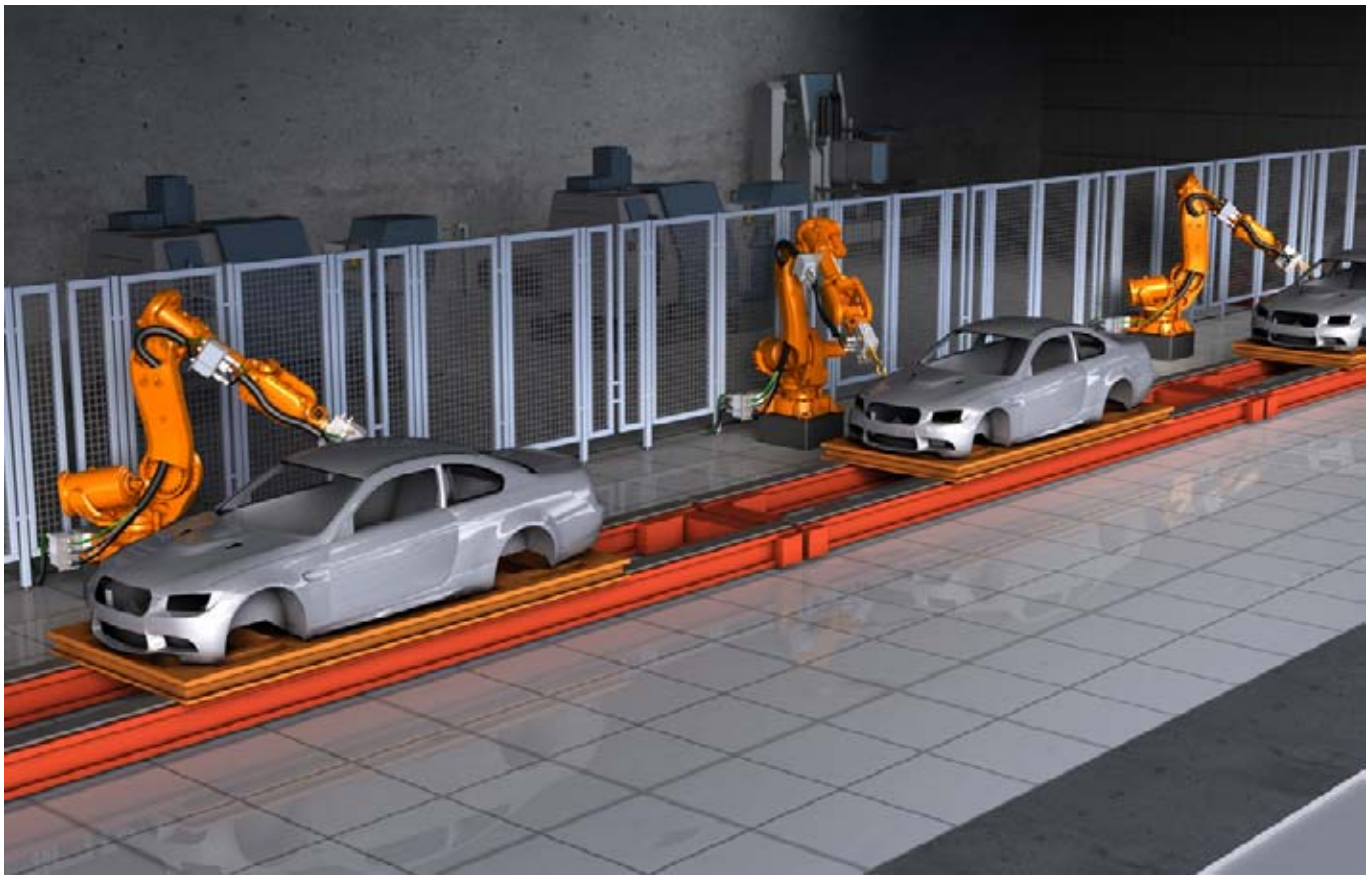
	Model Type	Order No.
19'' Rack Mounting Kit	RM-KIT	**1241440000**

Managed Switches

Managed switches offer extensive control mechanisms for data distribution and bandwidth management to coordinate and cope with the different requirements of communication participants in an industrial network. Configuration is either web-based using a simple and intuitive user interface, or using convenient management software in large networks with multiple switches, this could be Weidmüller's Net-Manager software for example.

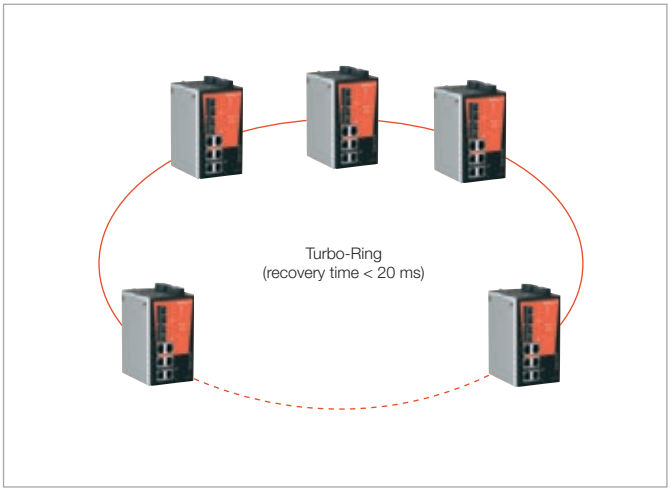
Powerful and reliable network redundancy

It is particularly important to have network redundancy to ensure system availability in today's industrial Ethernet infrastructures. This is because in a highly integrated system a connection error can lead to machine stoppage and thus to production losses. To minimise such risks in a managed Ethernet network Weidmüller has integrated high-performance redundancy mechanisms into its managed switches, this is in addition to the RSTP/STP standard and port-trunking.



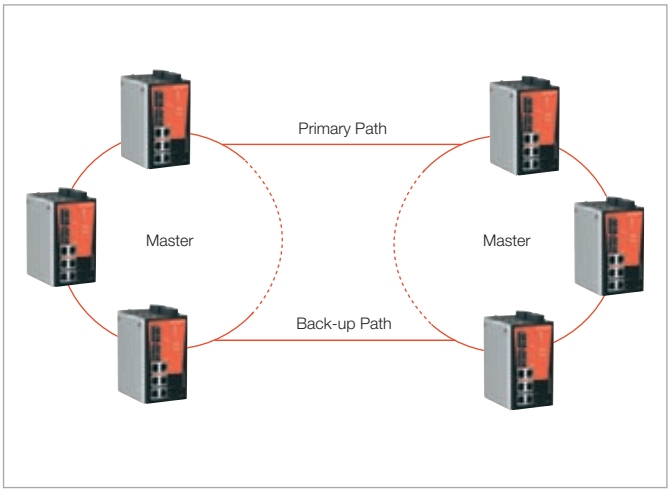
Ring redundancy

The Turbo-Ring technology integrated into Weidmüller's switches allows you to restore a network connection in case of failure in under 20 ms, and this with up to 250 switches in a ring. Turbo-Ring offers thee different topology options (Ring-Coupling, Dual-Ring and Dual-Homing) for different application requirements to ensure the maximum possible availability of industrial network applications.



Ring-Coupling

In some applications it is not sensible to have all equipment and devices in a single large redundant ring networked together as some of the devices may be located in remote parts of the plant. For such structures Ring-Coupling is ideal. It connects devices in multiple, smaller rings that are connected redundantly and directly with one another.



Dual-Homing

Two separate rings are connected through one managed switch via two independent connection points. The back-up connection is activated if the primary connection fails.