INDUSTRIAL ETHERNET
PRODUCTS

ROBUST INDUSTRIAL ETHERNET SOLUTIONS –
SAFETY AND PERFORMANCE FOR THE
INDUSTRIAL DATA COMMUNICATION

2024

DATWYLER

Single Pair Ethernet
System Alliance

INDUSTRIAL ETHERNET

THE FOUNDATION OF
MODERN INDUSTRIAL NETWORKS

Industrial Ethernet has established itself as the backbone of industrial communication and is indispensable for automation and networking in production environments. It is a specialised form of Ethernet that was developed specifically for the harsh conditions found in industrial facilities. This technology enables fast and efficient data transfer between machines and control systems and is crucial for the implementation of Industry 4.0 and the Internet of Things (IoT) in the manufacturing industry.

Compared to traditional communication solutions, Industrial Ethernet offers improved bandwidths, higher transmission speeds and the ability to process large amounts of data in real time. It is also robust against environmental influences such as temperature, vibration and electromagnetic interference, making it ideal for use in demanding industrial environments.

OPTIMISATION OF PRODUCTION
PROCESSES THROUGH
ADVANCED NETWORK TECHNOLOGY

The flexibility of Industrial Ethernet enables seamless integration of various industrial devices and systems within a network, increasing plant efficiency and productivity. With its extensive compatibility and scalability, Industrial Ethernet can be customised to meet the specific needs of each manufacturing facility, providing a future-proof solution for the growing demands of modern industry.

ETHERNET CABLES
FROM THE SPECIALIST

Our portfolio includes a wide range of Industrial Ethernet cables that have been specifically developed for use in demanding industrial environments. Featuring robust construction and high reliability, these cables are designed to deliver optimal performance in the harshest conditions. They easily meet the requirements of a wide range of industrial applications by ensuring reliable and efficient data transmission.

Selection of Industrial Ethernet cables (as of August 2024)

Standard IEC 61156	Category	Cores	Dimensions n x n x AWG	Application (type) [1]	Flexibility	UL appoval	PoDL IEEE 802.3	CPR	Flame propaga-tion	Zero halogen	Outdoor
Industrial Ethernet	Cat.5/5e	2 pairs	2 x 2 x AWG 26/19		drag chain	UL/AWM	✔	E_{ca}	✔	✔	✘
		4 pairs	4 x 2 x AWG 26/7		occasionally moved	UL/AWM	✔	E_{ca}	✔	✔	✘
			4 x 2 x AWG 26/19		drag chain	UL/AWM	✔	E_{ca}	✔	✔	✘
	Cat.6/6$_A$		4 x 2 x AWG 26/7 or 27/7		occasionally moved	UL/AWM	✔	E_{ca}	✔	✔	✘
			4 x 2 x AWG 26/7 or 27/7		occasionally moved	CMG	✔	E_{ca}	✔	✔	✘
	Cat.7		4 x 2 x AWG 23/1		fixed	UL/AWM	✔	E_{ca}	✔	✔	✘
			4 x 2 x AWG 26/7		occasionally moved	UL/AWM	✔	E_{ca}	✔	✔	✘
Profinet	Cat.5e	2 pairs/quad	4 x AWG 22/1	A	fixed	UL/AWM	✔	E_{ca}	✔	✘	✘
			4 x AWG 22/7	B	occasionally moved	UL/AWM	✔	E_{ca}	✔	✔	✘
			4 x AWG 22/19	C	drag chain	UL/AWM	✔	E_{ca}	✔	✔	✘
	Cat.6$_A$	4 pairs	4 x 2 x AWG 23/1	A	fixed	UL/AWM	✔	E_{ca}	✔	✔	✘
	Cat.7		4 x 2 x AWG 23/1	A	fixed	UL/AWM	✔	E_{ca}	✔	✔	✘

[1] Application according to Profinet Guideline

Other cable types are available upon request.

CERTIFIED CONNECTIVITY

Optimised network solutions for maximum performance and safety – reliably certified according to the highest standards.

THIS IS WHAT MAKES OUR ETHERNET CABLES SO UNIQUE:

- Datwyler produces more than 120,000 km of Ethernet cables per year in Switzerland
- Specialised manufacturer of Ethernet-based data technology
- Development partner for Cat.5/5e to Cat.6$_A$ and Cat.7 products including Single-Pair Ethernet (SPE)
- Cost savings thanks to an optimised design
- Highest quality: we test our materials and cables in our own laboratory
- UL and CSA approved for worldwide use

Sheath material	Shielding	Max. bandwidth	Max. length	Typical application	Availability	Stecker-kompatibel	Article number
PUR	S/UTP	100 MBit/s	60 m	Machine cabling, industrial communication	in development	M12, RJ45 Industr.	
PUR	SF/UTP	1 GBit/s	60 m	Machine cabling, industrial communication	in development	M12, RJ45 Industr.	
PUR	SF/UTP	1 GBit/s	60 m	Machine cabling, industrial communication	available	M12, RJ45 Industr.	24015800EK
PUR	S/FTP	10 GBit/s	60 m	Machine cabling, industrial communication	in development	M12, RJ45 Industr.	
LS0H	S/FTP	10 GBit/s	60 m	Machine cabling, industrial communication	available	M12, RJ45 Industr.	19467900DK
PUR	S/FTP	10 GBit/s	100 m	Backbone cable, industrial communication	available	M12, RJ45 Industr.	24016000EK
PUR	S/FTP	10 GBit/s	60 m	Machine cabling, industrial communication	available	M12, RJ45 Industr.	19466600EK
PVC	SF/UTP	100 MBit/s	100 m	Machine cabling, industrial communication	available	M12, RJ45 Profinet	24015900EK
PUR	SF/UTP	100 MBit/s	100 m	Machine cabling, industrial communication	available	M12, RJ45 Profinet	24016200EK
PUR	SF/UTP	100 MBit/s	60 m	Machine cabling, industrial communication	in development	M12, RJ45 Profinet	
PUR	SF/UTP	10 GBit/s	100 m	Backbone cable, industrial communication	in development	M12, RJ45 Profinet	
PUR	S/FTP	10 GBit/s	100 m	Backbone cable, industrial communication	available	M12, RJ45 Profinet	24016000EK

ROBUST INDUSTRIAL ETHERNET COMPONENTS

Discover our diverse selection of Industrial Ethernet components designed to meet the highest demands of industrial environments. Even under extreme conditions, our M12 and RJ45 connectors and patch cables offer outstanding robustness, reliability and performance. As a leading cable manufacturer, we rely on the latest technologies and strict quality standards so that our components exceed our customers' expectations. Rely on our products to keep your industrial networks stable and high-performance.

M12 / RJ45 industrial connectors (for field assembly)

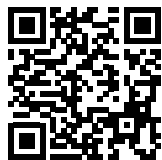| Product	Connection technology	Article No.	Name	Description	Category	Colour	Variant
	RJ45 tool-less, cutting clamp	65544800ZY	RJ45 plug IP20 IDC	8-wire, 4-wire, EIA/TIA T568 A, EIA/TIA T568 B, PROFINET	Cat.6$_A$	black	straight
	Piercing	65544900ZY	RJ45 plug IP20 90GRD A	with piercing contacts, angled, 4x90°, EIA/TIA T568 A	Cat.6$_A$	black	angled
	Piercing	65545000ZY	RJ45 plug IP20 90GRD B	with piercing contacts, angled, 4x90°, EIA/TIA T568 B	Cat.6$_A$	black	angled
	RJ45 tool-less, cutting clamp	65545100ZY	RJ45 plug IP20 IDC PROFINET	4-wire, PROFINET	Cat.5	green	straight
	Piercing	65545200ZY	RJ45 plug IP20 PROFINET 90GRD	with piercing contacts, angled, 4x90°, PROFINET	Cat.5	green	angled
	Screw clamp	65545400ZY	M12-D plug	field-assembly M12 plug, angled, pin, straight	Cat.5		straight
	Screw clamp	65545500ZY	M12-D socket	field-assembly M12 socket, straight	Cat.5		straight
	Push-in	65545600ZY	M12-D push-in plug	field-assembly M12 plug, pin, straight	Cat.5		straight
	Push-in	65545700ZY	M12-D push-in plug 90GRD	field-assembly M12 plug, pin, straight	Cat.5		angled
	Push-in	65545800ZY	M12-D push-in socket	field-assembly M12 socket, straight	Cat.5		straight
	Push-in	65545900ZY	M12-D push-in socket 90GRD	field-assembly M12 socket, angled	Cat.5		angled
	Cutting clamp	65546000ZY	M12-X plug	field-assembly M12 plug, IDC, IP67, straight	Cat.6$_A$		straight
	Cutting clamp	65546100ZY	M12-X socket	field-assembly M12 socket, IDC, IP67, straight	Cat.6$_A$		straight

M12 / RJ45 industrial patch cords

Product	RJ45 industrial patch cord	M12 D patch cord			M12 X patch cord	
Category	Cat.6$_A$	Cat.5e	Cat.5e	Cat.5e	Cat.6$_A$	Cat.6$_A$
Colour	grey	green	green	green	green	green
Application	fixed	drag chain	drag chain	drag chain	occasionally moved	occasionally moved
Variant	straight	straight	straight	straight	straight	straight
Termination	plug – plug	plug – plug	plug – socket	plug – open	plug – plug	plug – open
Structure	4 x 2 x AWG27/7	4 x AWG22/7	4 x AWG22/7	4 x AWG22/7	4 x 2 x AWG26/7	4 x 2 x AWG26/7
Sheath material	LS0H	PUR	PUR	PUR	PUR	PUR
Length:	Article No.					
1.0 m	65541100ZY	65541700ZY	65542300ZY	65542900ZY	65543500ZY	65544000ZY
2.0 m	65541200ZY	65541800ZY	65542400ZY	65543000ZY	65543600ZY	65544100ZY
3.0 m	65541300ZY	65541900ZY	65542500ZY	65543100ZY	65543700ZY	65544200ZY
5.0 m	65541400ZY	65542000ZY	65542600ZY	65543200ZY	65543800ZY	65544300ZY
10.0 m	65541500ZY	65542100ZY	65542700ZY	65543300ZY	65543900ZY	65544400ZY
15.0 m	65541600ZY	65542200ZY	65542800ZY	65543400ZY		

Other lengths, colors and versions on request

Active components (on request)

Product	Article No.	Description	Variant	Produkt	Article No.	Description	Variant
	65546200ZY	IoT Gateway, Fast Ethernet			65546800ZY	IE Switch, 5xRJ45, Fast Ethernet	5xRJ45
	65546300ZY	IoT Gateway, Fast Ethernet, 4G	4G		65546900ZY	IE Switch, 5xRJ45, Gigabit Ethernet	5xRJ45
	65546400ZY	IE Router, Fast Ethernet, 2xRJ45	2xRJ45		65548000ZY	IE Switch, 8xRJ45, Fast Ethernet	8xRJ45
	65546500ZY	IE Router, Fast Ethernet, 2xRJ45, 4G	2xRJ45 4G		65548100ZY	IE Switch, 8xRJ45, Gigabit Ethernet	8xRJ45
	65546600ZY	IE Router, Fast Ethernet, 4xRJ45	4xRJ45		65548400ZY	IE Switch, 8xRJ45, Fast Ethernet, PoE	PoE
	65546700ZY	IE Router, Fast Ethernet, 4xRJ45, 4G	4xRJ45 4G		65548500ZY	IE Switch, 8xRJ45, Gigabit Ethernet, PoE	PoE
					65548600ZY	Wireless Access Point/Client	

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