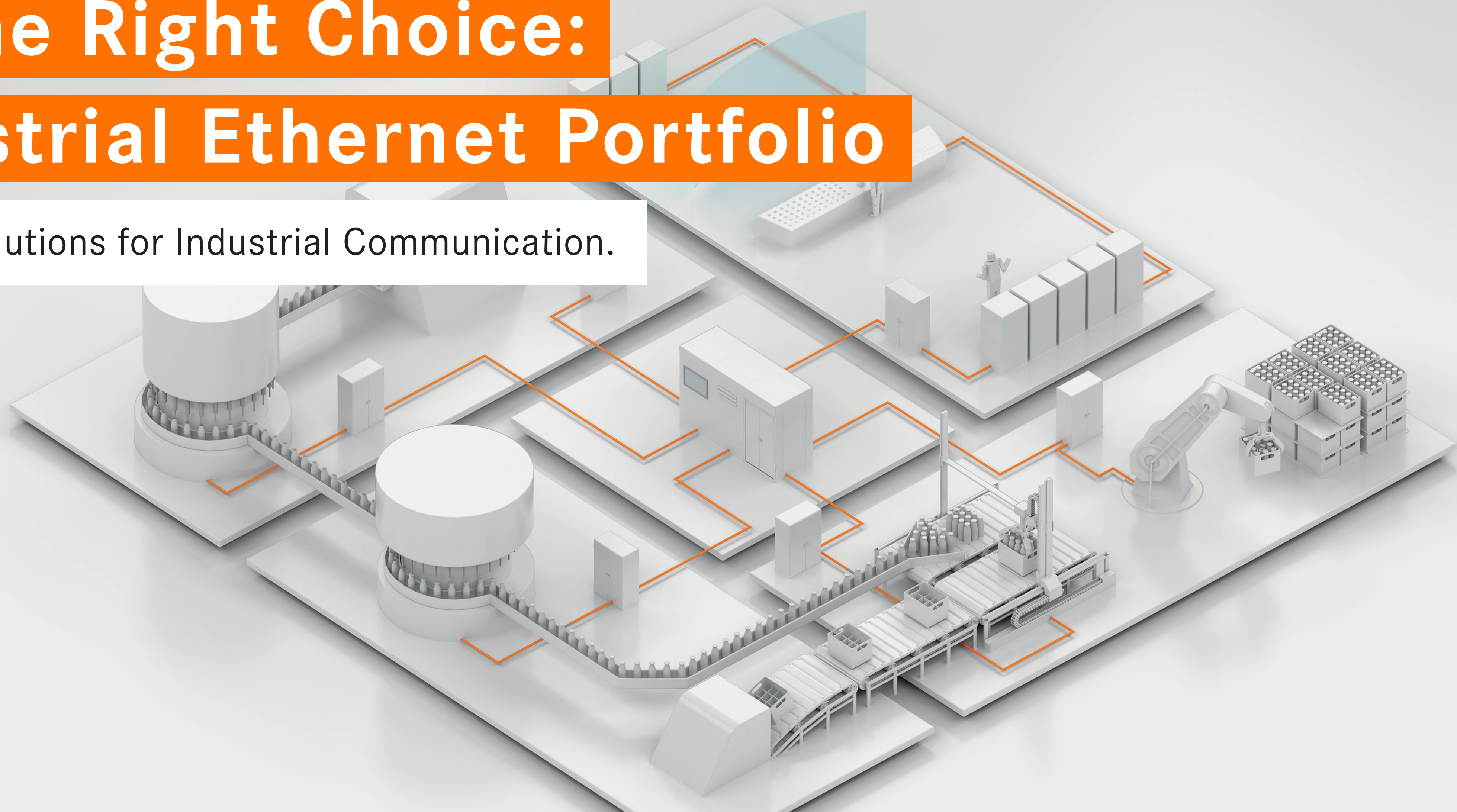


Always the Right Choice: Our Industrial Ethernet Portfolio

Smart Connection Solutions for Industrial Communication.



LAPP offers a protocol-independent industrial ethernet portfolio for communication in industrial networks and the shortest way to get there.

We focus on quality

Internet of Things and Industry 4.0 increase the demand on connection technology. Data transmission must be guaranteed at all times in order to avoid scenarios that could lead to production downtimes or even endanger people.

At LAPP we understand the risks and pay attention to the quality and functionality of our products and all components we supply to our customers.

Data transmission in harsh environments

LAPP has long-term experiences in designing and producing cables and cable accessories for harsh conditions. Suitable for various industries such as automotive, food & beverage, wind energy or railway. In permanent moving, fixed or robotic applications. Indoor, outdoor and even for ground installation.

Faster, easier, smaller, reliable

Our innovations are driven by challenges of our customers. As a manufacturer we are constantly developing innovative solutions for the most important challenges of the future.

Fast, easy and comprehensive: Our selection table shows you in a compact overview all products and accessories at a glance. Reaching from copper cables for different protocol-standards and application areas to several connector types such as RJ45 and M12 types.

Your advantages at a glance:

- Protocol independent expert advice
- One supplier for all your machine production and plant projects
- Widest range of high-performance copper cables
- Highest material availability
- Cables, patchcords or customer-specific assemblies
- Global availability at over 100 locations
- Products for fixed, flexible, drag chain and torsion installations

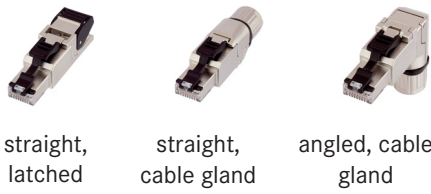


Selection Table for Industrial Ethernet Products

Standard	Class / Type	Pairs	Flexibility	Conductor Number of Wires	Conductor Size American Wire Gauge	UL	PoE	Flame Retardant	Halogen Free	Outdoor	Material of Outer Sheath	Shielding	Max Bitrate	Max Length	Typical Application	Unique Features	Article Number	Article Name	High Runner	Connectors											
																				RJ45				M12 D-coded			M12 X-coded				
																				plug			socket	plug		socket			plug		
																				PROFINET®	TIA-coded	TIA-coded, small cores	TIA-coded	PROFINET® 21700647	TIA-coded, 21700648	22261016	21700621	Incl. flange 21700622	21700602		
EtherNet IP, EtherCat	Cat. 5, 5e	2	fixed	1	24	No	N	Y	Y	N	HF	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling		2170280	ETHERLINE® H CAT. 5e 2x2x24/ 1AWG	Y			Y	Y								
				1	24	AWM	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling		2170281	ETHERLINE® P CAT. 5e 2x2x24/ 1AWG	Y			Y	Y								
			flexible	7	26	No	N	Y	Y	N	HF	SF/UTP	100 Mbit/s	60 m	Industrial Communication Machinery Cabling	space saving	2170283	ETHERLINE® H CAT. 5e 2x2x26/7AWG	Y			Y	Y								
				7	26	AWM	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	60 m	Industrial Communication Machinery Cabling	space saving	2170284	ETHERLINE® P CAT. 5e 2x2x26/7AWG	Y			Y	Y								
				7	26	CMX	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	60 m	Industrial Communication Machinery Cabling	space saving	2170430	ETHERLINE® Y EC Flex CAT.5e 1X4XAWG26/7						Y							
				7	26	CMX	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	60 m	Industrial Communication Machinery Cabling	space saving	2170431	ETHERLINE® P EC Flex CAT.5e 1X4XAWG26/7						Y							
			drag chain	7	22	AWM	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	100 m	Reduced Cabling Effort, Machine Wiring	extra power conductors	2170887	ETHERLINE® Cat.5 FRNC HYBRID													
				19	26	AWM	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	60 m	Drag Chain / Power Chain	space saving	2170289	ETHERLINE® FD P CAT5e 2X2XAWG26	Y			Y									
				19	26	CMX	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	60 m	Drag Chain / Power Chain	space saving	2170433	ETHERLINE® P EC FD CAT.5e 1X4XAWG26/ 19													
		4	fixed	1	24	No	Y	Y	Y	N	HF	SF/UTP	1 Gbit/s	100 m	Industrial Communication Machinery Cabling	CC-Link IE approved	2170296	ETHERLINE® H CAT. 5e 4x2x24/ 1AWG	Y			Y	Y			Y	Y	Y			
				1	24	AWM	Y	Y	Y	Y	PUR	SF/UTP	1 Gbit/s	100 m	Industrial Communication Machinery Cabling	CC-Link IE approved	2170297	ETHERLINE® P CAT. 5e 4x2x24/ 1AWG	Y			Y	Y			Y	Y	Y			
				1	24	No	Y	Y	Y	N	HF	SF/UTP	1 Gbit/s	100 m	Industrial Communication Machinery Cabling	CC-Link IE approved	2170298	ETHERLINE® H-H CAT. 5e 4x2x24/ 1AWG				Y	Y			Y	Y	Y			
				1	23	No	Y	Y	Y	N	Special	F/UTP	1 Gbit/s	100 m	Building Automation, Emergency Circuits	high flame retardance	2170905	ETHERLINE® FIRE Cat.5e PH120				Y	Y			Y	Y	Y			
			flexible	7	26	No	N	Y	Y	N	HF	SF/UTP	1 Gbit/s	60 m	Industrial Communication Machinery Cabling	CC-Link IE approved, space saving	2170299	ETHERLINE® H Flex CAT.5e 4X2XAWG26/7	Y			Y	Y			Y	Y	Y			
				7	26	CMG	N	Y	N	Y	PVC	SF/UTP	1 Gbit/s	60 m	Industrial Communication Machinery Cabling	CC-Link IE approved, space saving	2170486	ETHERLINE® Y Flex CAT.5e 4X2XAWG26/7				Y	Y			Y	Y	Y			
				7	26	AWM	Y	Y	Y	Y	PUR	SF/UTP	1 Gbit/s	60 m	Industrial Communication Machinery Cabling	CC-Link IE approved, space saving	2170300	ETHERLINE® P Flex CAT.5e 4X2XAWG26/7	Y			Y	Y			Y	Y	Y			
				7	24	No	Y	Y	Y	Y	PUR	SF/UTP	1 Gbit/s	100 m	Road Vehicles, Infotainment	up to 105°C, conform to ISO 6722	2170850	ETHERLINE® Cat. 5e FLO9YBC11Y 4x2xAWG24/7	Y		Y		Y			Y	Y	Y			
			drag chain	19	26	AWM	N	Y	Y	Y	PUR	S/UTP	1 Gbit/s	60 m	Drag Chain / Power Chain	CC-Link IE approved, space saving	2170489	ETHERLINE® FD P CAT5e 4X2XAWG26	Y			Y									
				19	26	AWM	N	Y	Y	Y	PUR	S/UTP	1 Gbit/s	60 m	Drag Chain / Power Chain	space saving	CE217489	ETHERLINE® FD P BK CAT5 4X2XAWG26/ 19	Y			Y									
	Cat. 6, 6 _A		fixed	1	22	No	Y	Y	Y	N	Special	SF/UTP	1 Gbit/s	100 m	Building Automation, Emergency Circuits	high flame retardance	2170913	ETHERLINE® FIRE Cat.6 PH120													
				7	24	No	Y	Y	Y	Y	PUR	S/FTP	10 Gbit/s	100 m	Road Vehicles, Infotainment	up to 105°C, conform to ISO 6722	2170581	ETHERLINE® Cat. 6A FLO9YBC11Y 4x2xAWG24/7	Y		Y		Y			Y	Y	Y			
			drag chain	19	26	CMX	N	Y	Y	Y	PUR	SF/UTP	1 Gbit/s	60 m	Drag Chain / Power Chain	CC-Link IE approved, space saving	2170488	ETHERLINE® FD P CAT.6 4X2XAWG26/ 19	Y			Y									
	Cat. 7		fixed	1	22	No	Y	Y	N	Y	PVC	S/FTP	10 Gbit/s	100 m	Fixed Installation, Camera Applications		2170474	ETHERLINE® Cat.7 Y			Y*		Y*			Y*	Y*	Y*			
				1	22	No	Y	Y	Y	Y	PUR	S/FTP	10 Gbit/s	100 m	Fixed Installation, Camera Applications		2170475	ETHERLINE® Cat.7 P			Y*		Y*			Y*	Y*	Y*			
				1	22	No	Y	Y	Y	Y	H	S/FTP	10 Gbit/s	100 m	Fixed Installation, Camera Applications		2170476	ETHERLINE® Cat.7 H			Y*		Y*			Y*	Y*	Y*			
				7	26	AWM	N	Y	Y	Y	PUR	S/FTP	10 Gbit/s	60 m	Industrial Communication Machinery Cabling	space saving	2170934	ETHERLINE® Cat.7 FLEX 4x2x26/7	Y			Y*	Y*			Y*	Y*	Y*			
		flexible	7	26	No	N	N	Y	Y	TPE	S/FTP	10 Gbit/s	60 m	Food and Beverage Industry	space saving, high chemical resistance	2170453	ETHERLINE® ROBUST Cat.7 FLEX 4x2x26/7				Y*	Y*			Y*	Y*	Y*				
			7	26	No	N	Y	N	Y	FR TPE	S/FTP	10 Gbit/s	60 m	Food and Beverage Industry	space saving, high chemical resistance and flame retardance	2170456	ETHERLINE® ROBUST FR Cat.7 FLEX 4x2x26/7				Y*	Y*			Y*	Y*	Y*				
			7	24	No	Y	Y	Y	Y	PUR	S/FTP	10 Gbit/s	100 m	Road Vehicles, Infotainment	up to 105°C, conform to ISO 6722	2170582	ETHERLINE® Cat. 7 FLO9YBC11Y 4x2xAWG24/7			Y*		Y*			Y*	Y*	Y*				
				1	22	CMX	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling		2170891	ETHERLINE® PN Cat.5e Y 2x2xAWG22	Y	Y			Y	Y		Y					
PROFINET®	Cat. 5e	A	fixed	1	22	CMG, PLTC	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling	Fast Connect, CPR	2170893	ETHERLINE® Y FC Cat.5	Y	Y			Y	Y		Y					
				1	22	CMG, PLTC	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	100 m	Cable Trays	Fast Connect	2170879	ETHERLINE® TRAY ER PN Y FC	Y	Y			Y	Y		Y					
				1	22	CMG	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	100 m	Mechanically stressed Areas	double sheath	2170933	ETHERLINE® PN Cat.5e YY		Y			Y	Y		Y					
				1	22	No	N	N	N	Y	PE	SF/UTP	100 Mbit/s	100 m	Direct Burial	Fast Connect, Reinforced Sheath	2170496	ETHERLINE® Cat.5 ARM		Y**											
				7	22	CMG	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling	Fast Connect	2170886	ETHERLINE® PN Cat.5 Y FLEX FC	Y	Y			Y	Y		Y					
		B	flexible	7	22	CMG	N	Y	Y	Y	HF	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling	Fast Connect, CPR	2170890	ETHERLINE® PN Cat.5e FRNC FLEX FC	Y	Y			Y	Y		Y					
				7	22	No	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling	black outer sheath, outdoor use	2170901	ETHERLINE® Y CAT.5e BK		Y			Y	Y		Y					
				7	22	No	N	N	Y	Y	TPE	SF/UTP	100 Mbit/s	100 m	Food and Beverage Industry	high chemical resistance	2170451	ETHERLINE® ROBUST PN Cat.5 2x2xAWG22/7		Y			Y	Y		Y					
				7	22	No	N	Y	N	Y	TPE	SF/UTP	100 Mbit/s	100 m	Food and Beverage Industry	high chemical resistance and flame retardance	2170454	ETHERLINE® ROBUST PN FR Cat.5 2x2xAWG22/7		Y			Y	Y		Y					
				7	22	No	N	Y	N	Y	TPE	SF/UTP	100 Mbit/s	100 m	Industrial Communication Machinery Cabling	increased temperature range	2170636	ETHERLINE® Cat.5e 105 plus		Y			Y	Y		Y					
		7		22	CMG, PLTC	N	Y	Y	Y	FRNC	SF/UTP	100 Mbit/s	100 m	Ship Building	Fast Connect, MARINE certified	2170889	ETHERLINE® MARINE FRNC FC CAT.5		Y			Y	Y		Y						
		C	drag chain	7	22	CMX	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	100 m	Drag Chain / Power Chain	Fast Connect	2170894	ETHERLINE® FD P FC CAT5 2x2xAWG22	Y	Y			Y	Y		Y					
			festoon	7	22	CMG, PLTC	N	Y	N	Y	PVC	SF/UTP	100 Mbit/s	100 m	Festoon Applications		2170936	ETHERLINE® FESTOON PN Cat.5e		Y			Y	Y		Y					
			torsion	19	22	AWM	N	Y	Y	Y	PUR	SF/UTP	100 Mbit/s	100 m	Robotics, torsional Movement		2170888	ETHERLINE® TORSION P CAT5 AWM 2X2XAWG22		Y											
	Cat.6 _A	A	fixed	1	22	No	Y	Y	N	Y	PVC	S/FTP	10 Gbit/s	100 m	Backbone Cable for Industrial Communication	CPR	2170464	ETHERLINE® Cat. 6A Y	Y		Y		Y			Y	Y	Y			
				1	22	No	Y	Y	Y	Y	PUR	S/FTP	10 Gbit/s	100 m	Backbone Cable for Industrial Communication		2170465	ETHERLINE® Cat. 6A P			Y		Y			Y	Y	Y			
				1	22	No	Y	Y	Y	N	H	S/FTP	10 Gbit/s	100 m	Backbone Cable for Industrial Communication	CPR	2170466	ETHERLINE® Cat. 6A H			Y		Y			Y	Y	Y			
				1	23	CMX	Y	Y	N	Y	PVC	SF/UTP	10 Gbit/s	100 m	Installation Cable for quick Assembly	Fast Connect, unshielded pairs	2170583	ETHERLINE® PN CAT.6A Y FC				Y	Y			Y	Y	Y			
1		23		CMX	Y	Y	Y	Y	FRNC	SF/UTP	10 Gbit/s	100 m	Installation Cable for quick Assembly	Fast Connect, unshielded pairs	2170584	ETHERLINE® PN CAT.6A FRNC FC				Y	Y			Y	Y	Y					
B		flexible	1	23	CMX	Y	Y	Y	Y	P																					

Connector Details

Article Number	Design	Min. Outer Diameter (mm)	Max. Outer Diameter (mm)	Min. Core Diameter (mm)	Max. Core Diameter (mm)	PU	AWG solid	AWG 7-wire	AWG 19-wire
RJ45 Plug									
PROFINET colour-coding (2-pairs)									
21700605	straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	22*
21700651	straight, cable gland	5.5	10	1	1.6	1	24 - 22	27 - 22	22*
21700638	angled, cable gland	5.5	10	1	1.6	1	24 - 22	27 - 22	22*
Colour coding acc. to TIA 568A									
21700600	straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	
21700652	straight, cable gland	5.5	10	1	1.6	1	24 - 22	27 - 22	
21700636	angled, cable gland	5.5	10	1	1.6	1	24 - 22	27 - 22	
Colour coding acc. to TIA 568B									
21700601	straight, latched	5	9	1	1.6	10	24 - 22	27 - 22	
21700653	straight, cable gland	5.5	10	1	1.6	1	24 - 22	27 - 22	
21700637	angled, cable gland	5.5	10	1	1.6	1	24 - 22	27 - 22	
Colour coding acc. to TIA 568A for small core diameters									
21700615	straight, latched	5	9	0.85	1.1	10	26 - 24	27 - 24	26*
21700654	straight, cable gland	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
21700639	angled, cable gland	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
Colour coding acc. to TIA 568B for small core diameters									
21700616	straight, latched	5	9	0.85	1.1	10	26 - 24	27 - 24	26*
21700655	straight, cable gland	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
21700640	angled, cable gland	5.5	10	0.85	1.1	1	26 - 24	27 - 24	26*
RJ45 Socket									
Colour coding acc. to TIA 568A									
21700611	ED-IE-AX-RJ45F-6A-A-FC	5	9	0.9	1.6	24	26 - 22	27 - 22	
Colour coding acc. to TIA 568B									
21700612	ED-IE-AX-RJ45F-6A-B-FC	5	9	0.9	1.6	24	26 - 22	27 - 22	
M12 D-coded									
Plug, straight, colour coding acc. to PROFINET®									
21700647	ED-IE-AX-M12D-5-PN-67-FC	6.2	9.7	0,85	1,6	1	26 - 22	26 - 22	
Plug, straight, colour coding acc. to TIA 568									
21700648	ED-IE-AX-M12D-5-67	5	6.1	0,85	1,6	1	26 - 22	26 - 22	
Socket, straight, colour coding acc. to TIA 568									
22261016	AB-C4-M12FSD-SH	4	8	1	1,6	1	26 - 22	26 - 22	
M12 X-coded									
Plug, straight									
21700602	ED-IE-AX-M12X-6A-67-Fc	6.3	9.7	0.85	1.6	1	26 - 22	26 - 22	
Socket, straight									
21700621	ED-IE-AX-M12XF-6A-67-Fc	6.3	9.7	0.85	1.6	1	26 - 22	26 - 22	
Socket, straight includes flange for wall-mounting									
21700622	ED-IE-AX-M12XF-RM-6A-67-Fc	6.3	9.7	0.85	1.6	1	26 - 22	26 - 22	



Connect now

Would you like to learn more about our reliable connection solutions for factories, machines and applications? We would be delighted to support you with expert advice.

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Find out more about our connection solutions at lapphungaria.hu/networks



For the complete catalogue „The World of LAPP – Industrial Communication“ please use the QR code.

Explanatory notes

Class / Type A – Cables for fixed installation B – Cables for flexible applications C – Cables for continuous flexing applications	Shielding F/UTP – overall foil shield, unshielded twisted pairs S/FTP – overall braid screen, foil shielded twisted pairs SF/UTP – overall braid screen and foil shield, unshielded twisted pairs
PoE – Power over Ethernet	High Runner There is frequent demand for such a product ensuring a good availability on stock
Material of Outer Sheath HF – Halogen Free compound PUR – Polyurethane PVC – Polyvinylchloride TPE – Thermoplastic Elastomer FRNC – Flame Retardant, Non-Corrosive compound	Connectors Y* – Transmission properties are limited by the connector

