Industrial Communication

Product overview for different protocol standards

LAPP

Protocol-independent products from LAPP

In modern industry, reliable and efficient communication networks are indispensable for optimally controlling production processes and responding flexibly to challenges. Whether PROFINET, EtherNet/IP, PROFIBUS, DeviceNet, EtherCAT or CAN Bus – each application has its own data transmission, security and speed requirements.
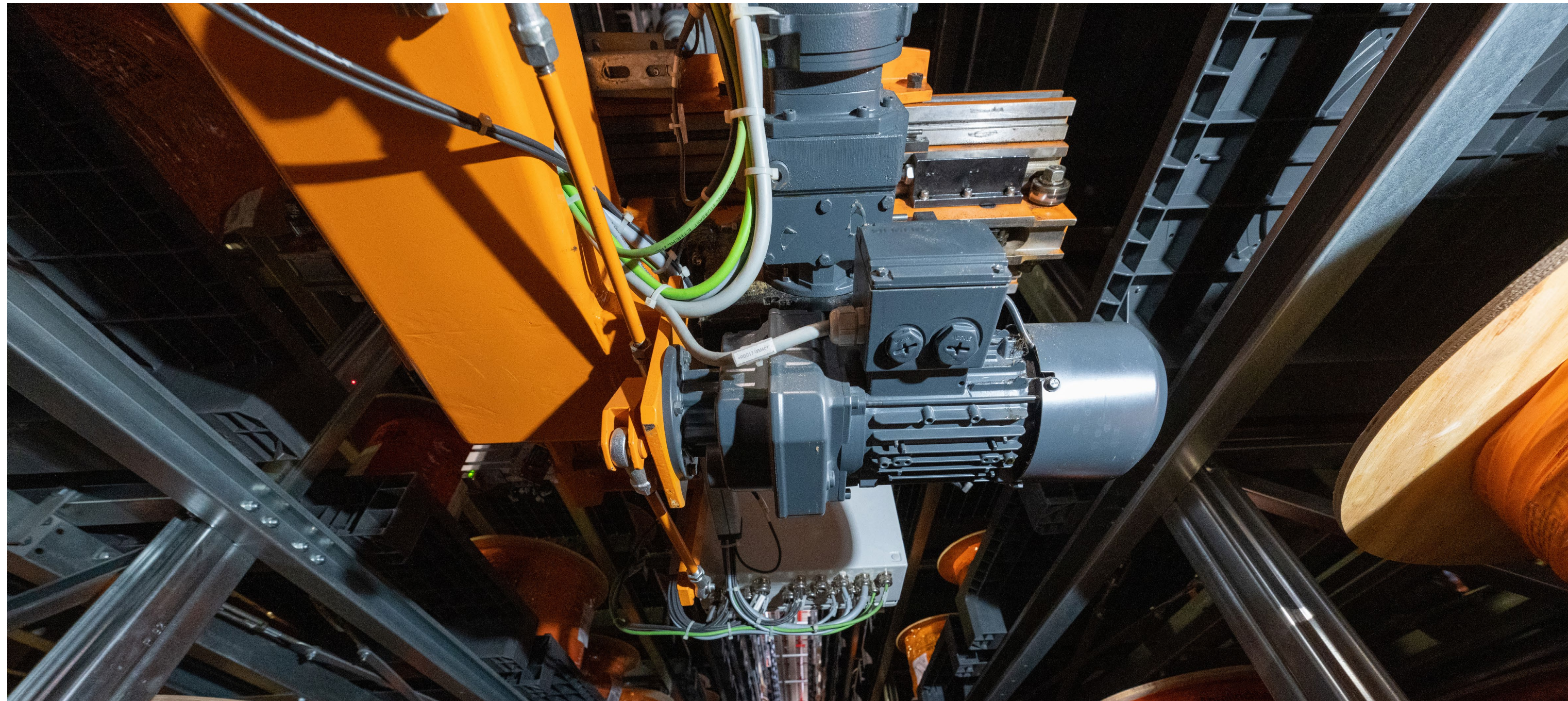
LAPP offers you customised solutions that connect your processes securely, efficiently and sustainably.

As a long-standing and experienced partner in Industrial Communication, we offer an extensive portfolio of certified, high-quality cables, connectors and components that meet all requirements in a wide range of environments. You benefit from our global availability, our technical know-how and our expertise as a member of leading industry associations.

With LAPP, you can rely on a company that is familiar with the challenges of modern industries and offers you the right solution – whether for fixed installations, flexible applications or demanding motion sequences. Trust in LAPP as your competent partner for smooth and future-proof communication – worldwide, reliably and flexibly.

Your benefits at a glance:

- Protocol independent: PROFINET, EtherNet/IP, EtherCAT, CC-Link IE etc.
- One cable supplier for industrial cabling
- Standard products on stock
- Global availability in over 80 countries
- Own engineering, production and testing centers
- On request: customised labeling, cable design

EtherNet/IP & EtherCAT

Cables

Fixed Application

Pairs	Article		Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170893	ETHERLINE® Y FC Cat.5	24/1AWG	CMG/PLTC	PVC	21700605	21700651	21700647	
	2170891	ETHERLINE® P PN Cat.5e	24/1AWG	CMX		21700605	21700651	21700647	
	2170464	ETHERLINE® Cat.6A Y	24/1AWG			21700600	21700653		21700602

Flexing Application

Pairs	Article		Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170886	ETHERLINE® PN Cat.5 Y FLEX FC	24/1AWG	CMG/PLTC	PVC	21700605	21700651	21700647	
4	2170934	ETHERLINE® Cat.7 FLEX	26/7AWG	AWM	PUR	21700616	21700655		21700602
	2170300	ETHERLINE® P Flex CAT.5e	26/7AWG	AWM	PUR	21700616	21700655		21700602

Cable Chain Application

Pairs	Article		Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170894	ETHERLINE® FD P FC CAT5	22/7AWG	CMX		21700605	21700651	21700647	
4	2170488	ETHERLINE® FD P CAT.6	26/19AWG	CMX	PUR	21700616	21700655		
	2170489	ETHERLINE® FD P CAT5e	26/19AWG	AWM		21700616	21700655		

Torsion Application

Pairs	Article		Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170888	ETHERLINE® TORSION P CAT5	22/19AWG	AWM		21700605	21700651		21700602
4	2170483	ETHERLINE® TORSION P CAT6A	24/7AWG	CMX	PUR	21700600	21700653		21700602
	2170481	ETHERLINE® TORSION Cat.7	24/7AWG	CMX		21700600	21700653		21700602

EtherNet/IP (Ethernet Industrial Protocol) is one of the leading industrial communication protocols that adapts the Common Industrial Protocol (CIP) to standard Ethernet technologies. Originally developed by Rockwell Automation, it is now managed by the Open DeviceNet Vendors Association (ODVA). EtherNet/IP uses the Internet Protocol Suite and IEEE 802.3 for data transport and is specifically designed for industrial automation applications.

LAPP is proud to be an active member of the ODVA and plays a crucial role in the ongoing development of the EtherNet/IP protocol. Our solutions provide reliable connectivity for industrial applications where fast and secure data transmission is critical. With a comprehensive portfolio of cables and components, we ensure that your systems operate smoothly and efficiently.

EtherCAT (Ethernet for Control Automation Technology) is an Ethernet-based fieldbus system designed for real-time computing requirements in automation technology. Originally developed by Beckhoff Automation, EtherCAT enables extremely short data update times and precise synchronisation, which are essential for many industrial applications.

LAPP is an active member of the EtherCAT Technology Group and supports the development of the protocol. Our EtherCAT solutions include high-performance cables and connectors that meet the demands of real-time communication and robust networks in industrial environments.

EtherNet/IP & EtherCAT

Patchcords

Office/Cabinet

Pairs	Article		Conductor	UL/CSA	Material of outer sheath	Connectors
4	24441316	ETHERLINE® LAN Cat.6A Patchcords	26/7AWG	cUL	LSZH	RJ45

Field

Pairs	Article		Application	Conductor	UL/CSA	Material of outer sheath	Connectors
2	2171097	ETHERLINE® Flex P Cat.5 Patchcords	Flexing	26/7AWG	No	PUR	RJ45, M12
4	2172317	ETHERLINE® FLEX Cat.6A Patchcords					RJ45, M12
2	2171139	ETHERLINE® EC FD Cat.5e	Cable chain				RJ45, M8, M12

Fibre Optic Cables

	Article		Material of outer sheath	Connectors
POF	28020001	HITRONIC® POF SIMPLEX Cable	PUR	free to choose
	28020002	HITRONIC® POF DUPLEX Cable		
PCF	28020702	HITRONIC® PCF DUPLEX Cable		
GOF	27600104	HITRONIC® HQN Outdoor Cable	PE	

Active Components

	Article		RJ45 Ports	Bandwidth
Unmanaged Switch	21700123	ETHERLINE® ACCESS U05T-2GEN	5	100 MBit/s
	21700124	ETHERLINE® ACCESS U08T-2GEN	8	
Managed Switch	21700125	ETHERLINE® ACCESS M06T-2GEN	6	
	21700126	ETHERLINE® ACCESS M08T-2GEN	8	
	21700137	ETHERLINE® ACCESS M08T02GSFP	8 + 2SFP	
NAT firewall	21700141	ETHERLINE® ACCESS NF04T	4	

PROFINET

Cables

Fixed Application

Pairs	Article		PROFINET Type	Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170893	ETHERLINE® Y FC Cat.5		24/1AWG	CMG/PLTC		21700605	21700651	21700647	
	2170891	ETHERLINE® PN Cat.5e	Type A	24/1AWG	CMX	PVC	21700605	21700651	21700647	
4	2170464	ETHERLINE® Cat. 6A Y		22/1AWG	No		21700600	21700653		21700602

Flexing Application

Pairs	Article		PROFINET Type	Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170886	ETHERLINE® PN Cat.5 Y FLEX FC		24/1AWG	CMG/PLTC	PVC	21700605	21700651	21700647	
	2170890	ETHERLINE® PN Cat.5e FRNC FLEX FC	Type B	22/7AWG	CMG, PLTC	FRNC	21700605	21700651	21700647	
4	2170930	ETHERLINE® PN Cat.6A Y FLEX		23/7AWG	CMG	PVC	21700600	21700653		21700602
	2170608	ETHERLINE® PN CAT.7 Y FLEX A		23/7AWG	CMG, CL3, AWM	PVC	21700600	21700653		21700602

Cable Chain Application

Pairs	Article		PROFINET Type	Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170894	ETHERLINE® FD P FC CAT5		22/7AWG	CMX		21700605	21700651	21700647	
4	2170484	ETHERLINE® FD P CAT.6A	Type C	24/7AWG	CMX, AWM	PUR	21700600	21700653		21700602
	2170487	ETHERLINE® PN Cat.7 FD P		24/7AWG	CMX, AWM		21700600	21700653		21700602

Torsion Application

Pairs	Article		PROFINET Type	Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170888	ETHERLINE® TORSION P CAT5		22/19AWG	AWM		21700605	21700651		
4	2170483	ETHERLINE® TORSION P CAT6A	Type C	24/7AWG	CMX	PUR	21700600	21700653		21700602
	2170481	ETHERLINE® TORSION Cat.7		24/7AWG	CMX		21700600	21700653		21700602

Robot Application

Pairs	Article		PROFINET Type	Conductor	UL/CSA	Material of outer sheath	RJ45	RJ45	M12D	M12X
2	2170941	ETHERLINE® ROBOT PN FC CAT.5e	Type R	22/19AWG	AWM	PUR	21700605	21700651		

PROFINET (Process Feld Network) is one of the world's leading industrial protocols, developed by Siemens and based on Ethernet. It was introduced as the successor to PROFIBUS and offers higher data transmission rates and a larger number of network devices. With PROFINET, up to 4 billion participants can be addressed at data rates of 1 Gbit/s or higher.

LAPP is an active member of PI (PROFIBUS & PROFINET International) and brings years of expertise to the development of passive network components such as cables, connectors, and patchcords. Our solutions are certified and optimised for different applications and environments, whether for fest installations or continuous motion.

The PROFINET products presented here are just a small selection of our comprehensive range – discover our comprehensive range now!

Use our industrial ethernet product finder.

PROFINET

Patchcords

Cabinet

	Article		PROFINET Type	Conductor	UL/CSA	Material of outer sheath	Connectors
4	2170570	ETHERLINE® Cabinet Cat.6a Patchcords	Cabinet	26/7AWG	cUL	PUR	RJ45

Field

	Article		PROFINET Type	Application	Conductor	UL/CSA	Material of outer sheath	Connectors
2	2171001	ETHERLINE® PN Cat.5 Patchcords	Type A	Fixed	26/7AWG	cUL	PUR	RJ45
2	2171025	ETHERLINE® PN Flex Cat.5 Patchcords	Type B	Flexing	22/7AWG	cUL	PVC	RJ45, M12
2	2171049	ETHERLINE® PN FD Cat.5 Patchcords	Type C	Cable Chain	22/7AWG	cUL	PUR	RJ45, M12
4	2172263	ETHERLINE® Torsion Cat.6A Patchcords	Type C	Torsion	26/7AWG	No	PUR	M12XF-S

Fibre Optic Cables

	Article		PROFINET Type	Material of outer sheath	Connectors
POF	various	HITRONIC® POF DUPLEX PN	Type B, C	PVC, PUR	free to choose
PCF	various	HITRONIC® PCF DUPLEX PN	Type B, C	PVC, PUR	
GOF	28052003	HITRONIC® GOF DUPLEX PNB	Type B	LSZH	
GOF	28052007	HITRONIC® GOF DUPLEX PNC	Type C	PUR	

Active Components

	Article		Ports	Remarks	Bandwidth
Unmanaged Switch	21700144	ETHERLINE® ACCESS UF05T	5	CC-A	100 MBit/s
Unmanaged Switch	21700145	ETHERLINE® ACCESS UF08T	8	CC-A	
Unmanaged Switch	21700146	ETHERLINE® ACCESS UF16T	16		
Managed Switch	21700140	ETHERLINE® ACCESS PNF04T	4	CC-B	
Managed Switch	21700142	ETHERLINE® ACCESS PNF08T	8	CC-B	
Managed Switch	21700143	ETHERLINE® ACCESS PNF16T	16		
NAT firewall	21700141	ETHERLINE® ACCESS NF04T	4		

AS-i

Cables

Fixed Application

Article		Colour	Cross Section [mm2]	UL/CSA	Material of outer sheath
2170228	UNITRONIC® BUS ASI (G) 2x1,5 YE	yellow	1,5	no	rubber
2170229	UNITRONIC® BUS ASI (G) 2x1,5 BK	black			
2170371	UNITRONIC® BUS ASI LD (G) YE 2x2.5	yellow	2,5		
2170372	UNITRONIC® BUS ASI LD (G) BK 2x2.5	black			
2170230	UNITRONIC® BUS ASI (TPE) 2X1,5 YE	yellow	1,5		TPE
2170231	UNITRONIC® BUS ASI (TPE) 2x1,5 BK	black			
2170232	UNITRONIC® BUS ASI (TPE) 2x1,5 RD	red			
2170842	UNITRONIC® BUS ASI (PVC) A 2X1,5 YE	yellow			
2170843	UNITRONIC® BUS ASI (PVC) A 2X1,5 BK	black		CMG, CL2	PVC
2170844	UNITRONIC® BUS ASI (PVC) A 2X1,5 RD	red			

Cable Chain Application

Article		Colour	Cross Section [mm2]	UL/CSA	Material of outer sheath
2170357	UNITRONIC® BUS ASI FD P FRNC YE	yellow	1,5	AWM	PUR
2170358	UNITRONIC® BUS ASI FD P FRNC BK	black			
2170317	UNITRONIC® BUS ASI LD FD P YE 2x2,5	yellow	2,5		
2170318	UNITRONIC® BUS ASI LD FD P BK 2x2,5	black			
2170830	UNITRONIC® BUS ASI FD (TPE) A 2X1,5 YE	yellow	1,5		TPE
2170831	UNITRONIC® BUS ASI FD (TPE) A 2X1,5 BK	black			

AS-Interface (Actuator-Sensor Interface), introduced in 1999, is an industrial networking solution designed to connect simple field I/O devices such as sensors and actuators with Programmable Logic Controllers (PLCs) and Distributed Control Systems (DCS). AS-i is commonly used as a low-cost remote I/O solution in various industries, including conveyor systems, packaging, bottling plants, and airport baggage handling.

AS-i can function as a partner network to higher-level fieldbus systems like PROFIBUS, DeviceNet, Interbus, and Industrial Ethernet. It is highly efficient in connecting binary ON/OFF devices, such as sensors and actuators, and excels in applications where simple data transmission is required.

LAPP is a proud member of the AS-Interface organisation and offers a variety of cable solutions tailored to AS-i networks.

In addition to the products shown here, we offer a variety of other AS-i solutions – discover our comprehensive range now!

PROFIBUS

Cables

Article		Application	Fast connect	UL/CSA	Material of outer sheath
2170220	UNITRONIC® BUS PB 1X2X0,64	Fixed	No	No	PVC
2170820	UNITRONIC® BUS PB FC 1X2X0,64		Yes	CMG	
2170996	UNITRONIC® BUS PB FRNC FC		Yes	CM	PUR
2170226	UNITRONIC® BUS PB H 7-W 1X2X0,64	Flexing	No	No	LSZH
2170222	UNITRONIC® BUS PB FD P 1X2X0,64	Cable Chain	No	No	PUR
2170322	UNITRONIC® BUS PB FD P FC 1X2X0,64		Yes	CMX	
2170495	UNITRONIC® BUS PB FD P HYBRID 1X2X0,64+4X1,5		No	No	
2170332	UNITRONIC® BUS PB TORSION 1X2X0,8	Robots & Torsion	No	CMX	

Connectors

Article		Design	IP rating
21700503	EPIC® DATA PB Sub-D	Sub-D	IP 20
21700501	EPIC® DATA PB Sub-D FC	Sub-D, Fast Connect	
21700561	EPIC® DATA PB Sub-D PRO	Sub-D full metal	
22260722	EPIC® DATA PB TR M12	M12 termination resistor	IP 67
22260646	EPIC® DATA PB M12	M12 full metal	

Cordsets

Article		Application	UL/CSA	Material of outer sheath	Connector
22260079	UNITRONIC® BUS PB M12	Cable Chain	No	PUR	M12

PROFIBUS (Process Feld Bus) is a widely used fieldbus system in automation, enabling communication between controllers and decentralised devices. Originally developed by Siemens, PROFIBUS has become one of the most commonly used protocols in Industrial Communication.

As a member of the PROFIBUS & PROFINET International (PI) organisation, LAPP has in-depth expertise and offers you certified cabels and components that are optimally tailored to the requirements of PROFIBUS DP and PA.

LAPP offers a wide range of cables and connections for PROFIBUS applications, including solutions for fixed installations, harsh environments, and applications that require high flexibility. Our products are tailored to meet industrial requirements and provide reliable data transmission even in demanding conditions. With LAPP, you benefit from quality, global availability and a wide range of solutions that can be adapted to a wide variety of operating conditions.

In addition to the products shown here, we offer a variety of other PROFIBUS solutions – discover our comprehensive range now!

CAN Bus & DeviceNET

CAN Bus

Cables

Article		Application	Remark	UL/CSA	Material of outer sheath
2170260	UNITRONIC® BUS CAN	Fixed		CMX	PVC
2170857	UNITRONIC® BUS CAN TRAY		for cable trays	CMG, PLTC-ER	
2170500	UNITRONIC® BUS CAN BURIAL		for outdoor & direct burial	No	PE
2170385	UNITRONIC® BUS HEAT 6722		acc. to ECE-R 118 , up to 105°C	No	PUR
2170272	UNITRONIC® BUS CAN FD P	Cable Chain		CMX	

DeviceNet

Cables

Article		Application	UL/CSA	Material of outer sheath
2170340	UNITRONIC® DeviceNet Thick+Thin	Fixed	CMG, PLTC	PVC, PUR
2170344	UNITRONIC® DeviceNet FD Thick+Thin	Cable Chain	CMX or CMG or PLTC	PUR

Connectors

Article		Design	IP rating
21700536	EPIC® DATA CAN Sub-D	Sub-D	IP 20
21700590	EPIC® DATA CAN Sub-D PRO	Sub-D full metal	
22260766	EPIC® DATA CAN TR M12*	M12 termination resistor	IP 67
22260765	EPIC® DATA CAN M12T*	M12 T-splitter	
21700641	EPIC® DATA CAN CCR*	M12 cable coupler	

*for both CAN Bus and DeviceNet

Cordsets

Article		Application	UL/CSA	Material of outer sheath	Connector
22260789	UNITRONIC® BUS CAN M12	Cable Chain	No	PUR	M12

The CAN Bus (Controller Area Network) was originally developed for the automotive industry but has quickly become a standard in many areas of industrial automation. CAN enables various controllers to communicate efficiently over a common cable network.

LAPP offers high-quality solutions for CAN-based applications, including cables for fixed installations and flexible applications that can withstand high mechanical stress. Our products are certified to global standards and ensure reliability and durability in various industrial environments.

DeviceNet is an industry standard for connecting controllers, sensors, and actuators, based on the Common Industrial Protocol (CIP) and using the Controller Area Network (CAN) as its communication medium. Developed by Rockwell Automation, DeviceNet is widely used in the automotive and machinery industries.

As a member of the ODVA, LAPP supports the further development of DeviceNet and offers a comprehensive range of products for data transmission and power supply in DeviceNet networks. Our solutions are designed for use in harsh industrial environments and meet global standards such as UL and CSA.

In addition to the products shown here, we offer a variety of other solutions – discover our comprehensive range now!

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