

ETHERLINE®

Data communication systems
for ETHERNET technology



Our ETHERLINE® branded products open up a secure, fast and reliable path to the future of Ethernet applications. The systems are made up of durable and robust cables and connection components for passive network technology, and deliver an effective solution for almost any application, particularly in an industrial environment.

Application range

- Industry and building networks
- Industrial machinery and plant engineering
- Automation technology
- Control engineering

Industrial Ethernet cable Cat.5/ Cat.5e**Industrial Ethernet**

ETHERLINE® Cat.5e	412
ETHERLINE® Cat.5e FLEX	413
ETHERLINE® Cat.5e FD	414
ETHERLINE® Cat.5 FD BK	415

Industrial Ethernet EC

ETHERLINE® EC FLEX Cat.5e	416
ETHERLINE® EC FD Cat.5e	417

PROFINET Type A - fixed installation

ETHERLINE® PN Cat.5	418
---------------------	-----

PROFINET Type B - flexible application

ETHERLINE® PN FLEX	419
--------------------	-----

PROFINET Type C - continuous flexing application

ETHERLINE® PN Cat.5 FD	420
ETHERLINE® TORSION Cat. 5	421

PROFINET Type C - special application

ETHERLINE® Y Cat.5e BK 2x2AWG22/7	422
ETHERLINE® Cat.5e 105 plus	423
ETHERLINE® MARINE FRNC FC CAT.5	424
ETHERLINE® Cat.5 ARM	425

PROFINET HYBRID Type B - flexible application

ETHERLINE® Cat.5 FRNC HYBRID	426
------------------------------	-----

Industrial Ethernet cable Cat.6**Industrial Ethernet - high flexible application**

ETHERLINE® CAT.6 FD	427
---------------------	-----

Industrial Ethernet cable Cat.6_A**Industrial Ethernet / PROFINET Type A - fixed installation**

ETHERLINE® Cat.6 _A	428
-------------------------------	-----

Industrial Ethernet / PROFINET Type B - flexible application

ETHERLINE® PN Cat.6 _A FLEX	429
---------------------------------------	-----

Industrial Ethernet / PROFINET Type C - continuous flexing application

ETHERLINE® FD CAT.6 _A	430
ETHERLINE® TORSION Cat.6 _A	431

Industrial Ethernet cable Cat.7**Industrial Ethernet / PROFINET Type A - fixed installation**

ETHERLINE® Cat.7	432
------------------	-----

Industrial Ethernet**Industrial Ethernet for special applications**

ETHERLINE® HEAT 6722	New	433
ETHERLINE® TRAY	New	434
ETHERLINE® FIRE Cat.5e PH120	New	434
ETHERLINE® ROBUST	New	435
ETHERLINE® ROBUST FR	New	436

Industrial Ethernet Patchcord Cat.5/Cat.5e**Industrial Ethernet - flexible application**

ETHERLINE® P Flex Cat.5e M12	437
ETHERLINE® P Flex Cat.5e M12-RJ45	438
ETHERLINE® P Flex Cat.5e RJ45	439
ETHERLINE® H Flex Cat.5e M12	440
ETHERLINE® H Flex Cat.5e M12-RJ45	441
ETHERLINE® H Flex Cat.5e RJ45	442

Industrial Ethernet EC Flex - flexible application

ETHERLINE® EC Flex Cat.5e M8	443
------------------------------	-----

Industrial Ethernet EC FD - continuous flexing application

ETHERLINE® EC FD Cat.5e M8	New	444
ETHERLINE® EC FD Cat.5e M8-RJ45	New	445
ETHERLINE® EC FD Cat.5e M12	New	446
ETHERLINE® EC FD Cat.5e M12-RJ45	New	447
ETHERLINE® EC FD Cat.5e RJ45	New	448
ETHERLINE® EC FD Cat.5e M12F	New	449

PROFINET Type A - fixed installation

ETHERLINE® PN Cat.5 M12		450
ETHERLINE® PN Cat.5 M12-RJ45	New	451
ETHERLINE® PN Cat.5 RJ45	New	452

PROFINET Type B - flexible application

ETHERLINE® type B Flexible application		
ETHERLINE® PN Flex Cat.5 M12		453
ETHERLINE® PN Flex Cat.5 M12-RJ45	New	454
ETHERLINE® PN Flex Cat.5 RJ45	New	455

PROFINET Type C - continuous flexing application

ETHERLINE® type C continuous flexing application			
ETHERLINE® PN FD Cat.5 M12			456
ETHERLINE® PN FD Cat.5 M12-RJ45	New		457
ETHERLINE® PN FD Cat.5 RJ45	New		458

Industrial Ethernet Patchcord Cat.6_A**Industrial Ethernet / PROFINET Type C - continuous flexing application**

ETHERLINE® FD CAT.6 _A M12	New	459
ETHERLINE® TORSION Cat.6 _A M12	New	460

Connectors for industrial cabling**Industrial Ethernet connectors RJ45**

Industrial Ethernet Connectors RJ45		
EPIC® DATA PN AX RJ45		461
EPIC® DATA PN 90 RJ45	New	461
EPIC® DATA AX RJ45 Cat.6A		462
EPIC® DATA RJ45F Cat.6A		462
EPIC® DATA 90 RJ45 Cat.6A	New	463
EPIC® DATA AX RJ45 Cat.6A IP68		463
EPIC® DATA HS RJ45F Cat.6A		464
EPIC® DATA M12D		464

M12 Field mountable connectors and wall ducts

in 12 Field mountable connectors and wall ducts		
EPIC® DATA M12X	New	465
EPIC® DATA FT IE		465
EPIC® DATA CCR FA	New	466
UNITRONIC® LAN 200 - Cat.5e		466

Ethernet cable for structured building cabling**Cables for fixed installation**

UNITRONIC® LAN 250 - Cat.6	467
UNITRONIC® LAN 500 - Cat.6 _A	468
UNITRONIC® LAN 1000 S/FTP Cat.7	469
UNITRONIC® LAN 1200 S/FTP Cat.7 _A	470
UNITRONIC® LAN 1500 S/FTP Cat.7 _A	471
UNITRONIC® LAN OUTDOOR	472

Cables for flexible applications

UNITRONIC® LAN FLEX	473
---------------------	-----

Patchcords for office applications**Patchcord RJ45**

Patchcable RJ45 CAT.5e	474
Patchcable RJ45 CAT.6 S/FTP	474
LANmark-6 RJ45 Patchcord	475
S-FTP Patchcable Crossover RJ45 CAT.5e	475

Connectors for office applications**Industrial Ethernet connectors RJ45**

Connector RJ45 CAT.5 Hirose TM11	476
Connector RJ45 CAT.5 Stewart SS37	476
Field-Terminable Connector RJ45 CAT.5e FM45	476
Connector RJ45 CAT.6 Hirose TM21	477
LANmark-6 EVO SnapIn Connector	477
LANmark-6 EVO SnapIn Connector AWG26	477
LANmark-6 EVO SnapIn Connector 10G	478
LANmark-7A GG45 SnapIn Connector	478
Crimping tool RJ45 Hirose	478

Accessories

Crimping tool RJ45 Stewart	479
Comfort Tool	479
Easy Termination Tool	479

Modular connection systems

Patchpanel Modular extendable	480
Frontplate 19" 1HE Cat.6A	480
Keystone Clips for EVO SnapIn Connectors	480
Keystone Clips for SnapIn Connectors	481
SnapIn rail mount Adapter	481
Flush-Mounted Outlet LSA+	481

LSA+ connection systems

Data Binder LSA+	482
Punch down tool LSA+	482



With ETHERLINE® products you are fit for future

If you want to avoid failures, down times and quality problems, you can trust on our complete and high quality product system. Lapp takes care to offer products of individuality and costumer requirement as well as long time usability. Our big product range of ETHERLINE® cables are suitable for nearly any application and is tested in our test laboratory, for example in drag chains. If there are special requirements as flexibility for applications in drag chains, with torsion stress, industrial environments

with high mechanical or temperature specifications, you can find some real all-rounders in the Lapp product program. If you are at the point where you will connect your cable to a device, you can also find suitable connectors, for example RJ45 or M12 connectors. Nearly for every cable and application you can choose the right connector, mostly with you need no special assembly tool. For some applications and for saving time and money, Lapp offers also a big range of patch cords. There the Indus-

trial Ethernet ETHERLINE® cables are used and are assembled with connectors who are especially produced for industrial requirements. The patch cords are completely tested in our plant and you can trust on Industrial Protection classes and transmission rates.



ETHERLINE® copper cables

- Copper data network cables for transmission in PROFINET® applications
- The right cable for almost every application area. There are optimized copper cables for Ethernet either for use in industrial applications (ETHERLINE®) or for use as structured building cabling (UNITRONIC® LAN)
- All current types are available with UL certification

ETHERLINE® connectors

- Configurable connectors for field assembly – fast and without the use of special tools
- Straight or angled RJ45 connectors with colour-coded wire manager for easy connection to 2-pair or 4-pair cables
- M12 D-coded connector for transmission rate up to 100 Mbit/s
- M12 X-coded connector for transmission rate up to 10 Gbit/s

ETHERLINE® assemblies

- Proven cable quality combined with highquality connectors
- A huge range with overmoulded RJ45 or M12 connectors as angled or straight versions are available from stock
- Factory-tested patch cords save time, prevent differences in connection quality and enable to attain a higher level of sealing tightness

Type specification according to the PROFINET® guideline

The PROFINET® system is specified internationally in IEC 61918 'Industrial communication networks – Installation of communication networks in industrial premises' for cabling within and between automation islands and/or production islands. The specific infrastructure for PROFINET® cabling and connection solutions is standardised in turn in IEC 61784-5-3. This applies for copper-based and fibre optic transmission media and wireless trans-

mission. The 'PROFINET® Cabling and Interconnection Technology Guideline' is created by a working group within the PNO. This guideline reflects IEC 61784-5-3. It always specifies three cable types for copper conductors – for 2-pair and 4-pair cables. This specification therefore defines the exact structure and the mechanical and electrical requirements.

- Type A: for fixed installation, no flexing after installation (solid conductor)
- Type B: for flexible installation, occasional flexing of the cable following installation (7-wire stranded conductor)
- Type C: for special requirements such as use in power chains, torsion applications, etc. (solid wire or flexible stranded conductors with up to 19-wire structure)

Following table shows all three cable types with their design acc. to PROFINET®-Guideline

Number of pairs/cable type	Typ A	Typ B	Typ C
2-pair (2x2)	AWG22/1	AWG22/7	AWG22/1...19
4-pair (4x2)	Min. AWG23/1	Min. AWG23/7	Min. AWG24/1...19

Photographs are not to scale and do not represent detailed images of the respective products.

PROFINET® finder



PROFINET® 2-pair up to 100 MBit/s

Cables			Suitable connectors		
Application	Article number	Description	Application	Article number	Description
4-pin type A for fixed installation	2170891	ETHERLINE® PN Cat.5e Y 2X2XAWG22	M12 plug, D-coded	22260820	AB-C4-M12MSD-SH
	2170893	ETHERLINE® Y FC Cat.5			
	2170494	ETHERLINE® PN Cat.5e YY			
4-pin type B for flexible application	2170886	ETHERLINE® PN Cat.5 Y FLEX FC	M12 socket, D-coded	22261016	AB-C4-M12FSD-SH
	2170890	ETHERLINE® PN Cat.5e FRNC FLEX FC			
	2170889	ETHERLINE® MARINE FRNC FC Cat.5			
4-pin type C for special application	Drag chain	2170894	RJ45 connector, straight	21700605	ED-IE-AX-5-PN-20-FC
	Torsion	2170888			
	Routing underground	2170496	RJ45 connector, angled	21700638	ED-IE-90-6A-PN-20-FC
	Outdoor installation	2170901			
	Increased temperature range	2170636			
	Food & Beverage	2170451 2170454			
		ETHERLINE® Cat.5e 105 plus			
		ETHERLINE® ROBUST PN Cat.5			
		ETHERLINE® ROBUST PN FR Cat.5			



PROFINET® 4-pair up to 10 GBit/s

Cables			Suitable connectors		
Application	Article number	Description	Application	Article number	Description
8-pin type A for fixed installation	Cat.6 _A	2170466	M12 plug, X-coded	21700602	ED-IE-AX-M12X-6A-67-FC
		2170465			
		2170464			
	Cat.7	2170476	M12 socket, X-coded	21700621	ED-IE-AX-M12XF-6A-67-FC
		2170475			
		2170474			
8-pin type B for flexible application	Cat.6 _A	2170930	RJ45 connector, straight, TIA568-A	21700600	ED-IE-AX-6A-A-20-FC
		2170931			
		ETHERLINE® PN Cat.6 _A Y FLEX 4x2x23/7			
8-pin type C for special application	Drag chain, Cat.6 _A	2170485	RJ45 connector, straight, TIA568-B	21700601	ED-IE-AX-6A-B-20-FC
		2170484			
	Torsion, Cat.6 _A	2170483	RJ45 connector, angled, TIA568-A	21700636	ED-IE-90-6A-A-20-FC
		ETHERLINE® FD Cat.6 _A 4X2X24/7AWG			
		2170482			
		ETHERLINE® FD P Cat.6 _A 4X2X24/7AWG			
	Torsion, Cat.6 _A	2170483	RJ45 connector, angled, TIA568-B	21700637	ED-IE-90-6A-B-20-FC
		ETHERLINE® TORSION P Cat.6 _A 4X2XAWG24/7			
		ETHERLINE® TORSION Y Cat.6 _A 4X2XAWG24/7			

Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® Cat.5e

Fixed installation



Info

- Industrial Ethernet cable
- Cat.5e

Benefits

- Seamless communication from the sensor/actuator level to the Internet
- Screened against interference
- Can be used in dry or damp rooms
- Can be used for Industrial Ethernet in harsh industrial environments
- Cables with PUR jacket: 1000 V UL- rating for installation next to power cables

Application range

- 2pair: 10/ 100 Mbit/s for Industrial Ethernet
- 4pair: 10/ 100/ 1000 Mbit/s for Industrial Ethernet
- Suitable for EtherCAT and EtherNet/IP applications
- Industrial use
- Fixed installation

Product features

- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- PUR outer sheath is highly resistant to mineral oils and abrasion
- Halogen-free outer sheath

Norm references / Approvals

- PUR versions: UL AWM Style 21576
- Flame retardant acc. to IEC 60332-1-2
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Solid conductor
- Core insulation made of foam skin
- 2 or 4-pair version
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)

Technical data



ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: 7.5 x outer diameter (2 pair cable)
Fixed installation: 8 x outer diameter (4 pair cable)



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Characteristic impedance
100 Ohm +/- 15%



Temperature range
cable with PUR jacket
Fixed installation: VDE -30°C to +80°C;
UL/CSA -30°C to +80°C
flexing: VDE -5°C to +50°C;
UL/CSA -5°C to +80°C
cable halogenfree compound
fixed installation: -30°C to +80°C
moved: -5°C to +60°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free jacket					
2170280	ETHERLINE® H CAT.5e	2 x 2 x AWG24/1	6.1	22	45
PUR outer sheath, halogen-free					
2170281	ETHERLINE® P CAT.5e	2 x 2 x AWG24/1	6.1	22	53
4-pair version					
Halogen-free jacket					
2170296	ETHERLINE® H CAT.5e	4 x 2 x AWG24/1	6.3	32	54
2170298	ETHERLINE® H-H CAT.5e	4 x 2 x AWG24/1	6.3 / 8.3	32	80
PUR outer sheath, halogen-free					
2170297	ETHERLINE® P CAT.5e	4 x 2 x AWG24/1	6.3	32	62

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Field-Terminable Connector RJ45 CAT.5e FM45 refer to page 476
- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA HS RJ45F Cat.6_A refer to page 464
- EPIC® DATA M12D refer to page 464
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466
- SMART STRIP stripping tool
- DATA STRIP stripping tool refer to page 1001



ETHERLINE® Cat.5e FLEX

Flexible use



Info

- Industrial Ethernet cable
- Cat.5e
- Only for patch cable applications (max. 60 m)



Benefits

- Seamless communication from the sensor/actuator level to the Internet
- Screened against interference
- Can be used in dry or damp rooms
- Can be used for Industrial Ethernet in harsh industrial environments
- Cables with PUR jacket: 1000 V UL- rating for installation next to power cables

Application range

- 2pair: 10/100 Mbit/s for Industrial Ethernet
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet
- Suitable for EtherCAT and EtherNet/IP applications
- For flexible applications (7-wire stranded conductor)
- Only for patch cable applications (max. 60 m)

Product features

- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- Halogen-free outer sheath
- PUR outer sheath is highly resistant to mineral oils and abrasion

Norm references / Approvals

- PVC version with UL/CSA (CMG) certification
- PUR versions: UL AWM Style 21576
- Flame-retardant according IEC 60332-1-2
- Cable with PUR or halogenfree compound: Halogen-free according to IEC 60754-1 (amount of halogen acid gas) Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Stranded conductor, bare, 7-wire
- Core insulation made of foam skin
- 2 or 4-pair version
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Outer sheath as either PUR or LSZH
- Colour: water blue (RAL 5021)
- PVC jacket colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000829 ETIM 5.0 Class-Description: Signal-/telecommunications cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Fixed installation: 8 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 1000 V Core/screen: 500 V
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range cable with PUR jacket Fixed installation: VDE -30°C to +80°C; UL/CSA -30°C to +80°C flexing: VDE -5°C to +50°C; UL/CSA -5°C to +80°C cable halogenfree compound Fixed installation: -30°C to +80°C flexing: -5°C to +60°C cable with PVC jacket Fixed installation: -40°C to +80°C flexing: -10°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
Halogen-free jacket					
2170283	ETHERLINE® H Flex CAT.5e	2 x 2 x AWG26/7	5.9	19	43
PUR outer sheath, halogen-free					
2170284	ETHERLINE® P Flex CAT.5e	2 x 2 x AWG26/7	5.9	19	45
4-pair version					
Halogen-free jacket					
2170299	ETHERLINE® H Flex CAT.5e	4 x 2 x AWG26/7	6.3	25	48
PUR outer sheath, halogen-free					
2170300	ETHERLINE® P Flex CAT.5e	4 x 2 x AWG26/7	6.3	25	54
PVC outer sheath					
2170486	ETHERLINE® Y Flex CAT.5e	4 x 2 x AWG26/7	6.4	30	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Field-Terminable Connector RJ45 CAT.5e FM45 refer to page 476
- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA HS RJ45F Cat.6_A refer to page 464
- EPIC® DATA M12D refer to page 464
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466
- DATA STRIP stripping tool refer to page 1001



ETHERLINE® Cat.5e FD

Highly flexible application

LAPP KABEL STUTTGART ETHERLINE® FD P Cat.5e 2x2xAWG26/19



Info

- Industrial Ethernet cable
- For highly flexible applications
- Only for patch cable applications (max. 60 m)

Benefits

- Seamless communication from the sensor/actuator level to the Internet
- Screened against interference
- Can be used in dry or damp rooms
- Industrial use
- Cables with PUR jacket: 1000 V UL- rating for installation next to power cables

Application range

- 2pair: 10/100 Mbit/s for Industrial Ethernet
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet
- Only for patch cable applications (max. 60 m)
- Suitable for EtherCAT and EtherNet/IP applications
- Power chain applications

Product features

- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- PUR outer sheath is highly resistant to mineral oils and abrasion
- Halogen-free outer sheath
- Cables with PUR jacket: 1000 V UL- rating for installation next to power cables

Norm references / Approvals

- PUR versions: UL AWM Style 21576
- Flame-retardant according IEC 60332-1-2
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Bare stranded copper wire, 26AWG (19 x 0.10), (0.14 mm²)
- Inner sheath: thermoplastic elastomer, halogen-free
- 2 or 4-pair version
- Screening: wrapped with braided tinned-copper wires
- PUR outer sheath
- Colour: water blue (RAL 5021)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Fixed installation: 8 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 1000 V Core/screen: 500 V
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range cable with PUR jacket Fixed installation: VDE -30°C to +80°C; UL/CSA -30°C to +80°C flexing: VDE -5°C to +50°C; UL/CSA -5°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
2-pair version					
2170289	ETHERLINE® FD P CAT.5e	2 x 2 x AWG26/19	6.2	20	48
4-pair version					
2170489	ETHERLINE® FD P CAT.5e	4 x 2 x AWG26/19	6.6	27	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.6 Hirose TM21 refer to page 477
- SMART STRIP stripping tool
- DATA STRIP stripping tool refer to page 1001



ETHERLINE® Cat.5 FD BK

The Ethernet cable for installation in events



Info

- For highly flexible industrial applications
- Cat.5e-Performance
- Only for patch cable applications (max. 60 m)

Benefits

- Additional application options thanks to suitability for outdoor use, UV-resistant
- Good flexibility - easy installation with tight space requirements
- Screened against interference
- Easy to coil for mobile use
- Usable on the roads

Application range

- IEEE 802.3: 10/100/1000Base-T
- IEEE 802.5: ISDN; FDDI; ATM
- Suitable for the transfer of audio signals (ETHERSOUND), light control signals (DMX over Ethernet), or for computer networking
- Only for patch cable applications (max. 60 m)
- Suitable for EtherCAT and EtherNet/IP applications
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet

Product features

- CAT.5-Performance
- Specifically developed for road environments
- Suitable for outdoor use, UV-resistant
- PUR outer sheath is highly resistant to mineral oils and abrasion
- Premium screening against electromagnetic interference

Norm references / Approvals

- UL AWM Style 21576
- Flame retardant acc. to IEC 60332-1-2
- Halogen-free according to IEC 60754-1 (amount of halogen acid gas)
Corrosiveness of combustion gases according to IEC 60754-2 (degree of acidity)

Product Make-up

- Bare stranded copper wire, 26AWG (19 x 0.10), (0.14 mm²)
- Insulation: foam skin, max. core diameter 1.0 mm
- Twisting: 2 twisted-pair cores, stranding from 4 pairs
- Inner sheath: thermoplastic elastomer, halogen-free
- Screening: wrapped with braided tinned-copper wires
- Outer sheath: halogen-free PUR, black

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 8 x outer diameter
	Test voltage Core/core: 1000 V Core/screen: 500 V
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range cable with PUR jacket Fixed installation: VDE -30°C to +80°C; UL/CSA -30°C to +80°C flexing: VDE -5°C to +50°C; UL/CSA -5°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® Cat.5 FD BK					
CE217489	ETHERLINE® FD P BK Cat.5	4x2xAWG26/19	6.6	27	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Standard lengths: (100; 500; 1000) m

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.6 Hirose TM21 refer to page 477
- SMART STRIP stripping tool



ETHERLINE® EC FLEX Cat.5e

Flexible use



Info

- For EtherCAT applications
- Cat.5e-Performance
- Only for patch cable applications (max. 60 m)

Benefits

- Can be used for Industrial Ethernet in harsh industrial environments
- Can be used in dry or damp rooms
- Lower space requirement

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- For flexible applications (7-wire stranded conductor)
- Many applications with Industrial Ethernet, i.e. fixed installation and flexible use.
- For internal wiring of electric and electronic equipment in switch cabinets
- Only for patch cable applications (max. 60 m)

Product features

- PUR (Polyurethane) Version with increased robustness, UV- resistance and halogen free
- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Norm references / Approvals

- PVC version with UL/CSA (CMX) certification
- Flame-retardant according to UL VW1/CSA FT1

Product Make-up

- Stranded tinned 7-wire conductor
- Core insulation: PE
- Insulation colour-codes: orange/white-orange; green/white-green
- Star quad
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- PVC or PUR jacket material
- Colour: green (based on RAL 6018)

Technical data



ETIM 5.0 Class-ID: EC000829
ETIM 5.0 Class-Description:
Signal-/telecommunications cable



Peak operating voltage

max. 100 V (not for power applications)



Minimum bending radius

Fixed installation: 4 x outer diameter
Flexing: 8 x outer diameter



Characteristic impedance

100 Ohm +- 15%



Temperature range

fixed installation
PVC: -30°C to +80°C
PUR: -40°C to +80°C
flexing
PVC: -5°C to +50°C
PUR: -30°C to +50°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC outer sheath					
2170430	ETHERLINE® Y EC FLEX Cat.5e	1 x 4 x AWG26/7	5.1	20	37
PUR outer sheath, halogen-free					
2170431	ETHERLINE® P EC FLEX Cat.5e	1 x 4 x AWG26/7	5.1	20	35

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® SENSOR M8 refer to page 382
- Field-Terminable Connector RJ45 CAT.5e FM45 refer to page 476
- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461



ETHERLINE® EC FD Cat.5e

Highly flexible application



Info

- For EtherCAT applications
- For highly flexible industrial applications
- Cat.5e-Performance

Benefits

- Can be used for Industrial Ethernet in harsh industrial environments
- Can be used in dry or damp rooms
- Lower space requirement

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- For highly flexible applications (power chains, moving machine parts)
- Many applications with Industrial Ethernet, e.g. EtherCat, i.e. fixed installation, flexible and highly flexible use
- For internal wiring of electric and electronic equipment in switch cabinets
- Only for patch cable applications (max. 60 m)

Product features

- PUR outer sheath, halogen-free
- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Norm references / Approvals

- Halogen-free according to VDE 0472-815

Product Make-up

- Tinned stranded copper wire, 26AWG (19 x 0.10), (0.14 mm²)
- Core insulation: PE
- Insulation colour-codes: orange/white-orange; green/white-green
- Star quad
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Outer sheath: PUR compound, halogen-free
- Colour: green (based on RAL 6018)

Technical data



ETIM 5.0 Class-ID: EC000829
ETIM 5.0 Class-Description:
Signal-/telecommunications cable



Peak operating voltage
max. 100 V (not for power applications)



Minimum bending radius
Fixed installation: 4 x Outer diameter
Flexing: 8 x outer diameter



Characteristic impedance
100 Ohm +/- 15%



Temperature range
Fixed installation: -40°C to +80°C
Flexing: -30°C to +50°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® EC FD Cat.5e					
2170434	ETHERLINE® EC FD Cat.5e	1 x 4 x AWG26/19	5	20	35

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® SENSOR M8 refer to page 382



ETHERLINE® PN Cat.5

Fixed installation



Info

- For PROFINET applications type A
- CAT.5/5e

Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 100 m
- Suitable for EtherCAT and EtherNet/IP applications
- ETHERLINE® TRAY ER PN Y FC: installation in open cable trays without any conduit

Norm references / Approvals

- ETHERLINE® Y FC with PLTC approbation and AWM Style 21694
- ETHERLINE® PN Cat.5e YY with UL CMG
- ETHERLINE® PN Cat.5e Y with UL CMX
- ETHERLINE® TRAY ER PN Y FC with PLTC ER approval

Product Make-up

- Solid bare copper wire AWG22
- Core insulation: PE
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PVC
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius See data sheet
	Test voltage See data sheet
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range See data sheet

Product features

- Fixed installation
- CAT.5-Performance
- FC: "Fast Connect" cable design
- Flame-retardant according IEC 60332-1-2
- ETHERLINE® Y FC, ETHERLINE® YY, ETHERLINE® TRAY ER PN Y FC : flame-retardant according to CSA FT-4

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
conventional cable assembly					
2170891	ETHERLINE® PN Cat.5e Y	2 x 2 x AWG22/1	6.5	30.4	56
FC: "Fast Connect" cable design					
2170893	ETHERLINE® Y FC Cat.5	2 x 2 x AWG22/1	6.8	30.4	70
2170879	ETHERLINE® TRAY ER PN Y FC	2 x 2 x AWG22/1	6.8	30.4	70
Suitable for outdoor use and direct burial					
2170494	ETHERLINE® PN Cat.5e YY	2 x 2 x AWG22/1	7.8	30.4	62

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA RJ45F Cat.6_A refer to page 462
- EPIC® DATA M12D refer to page 464



ETHERLINE® PN FLEX

Flexible use



Info

- For Profinet applications
- CAT.5-Performance
- Flexible use

Benefits

- For PROFINET applications type B
- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications
- For flexible applications (7-wire stranded conductor)

Product features

- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- CAT.5-Performance
- FRNC Version: Halogene free and flame retardant
- Fast Connect (FC) cable design

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)
- ETHERLINE® PN Cat.5 Y FLEX FC: **ECOLAB®** Industry standard for innovation and efficiency in the field of professional cleaning and disinfection

Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: PE
- Star quad
- Inner sheath made of PVC or FRNC
- Overall screening with copper braid and plastic-laminated aluminium foil
- PVC or FRNC jacket material
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius FRNC cable: during installation: 8 x outer diameter fixed: 4 x outer diameter PVC cable: during installation: 15 x outer diameter fixed: 10 x outer diameter
	Test voltage Core/core: 2000 V Core/screen: 2000 V
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range cable halogenfree compound Fixed installation: -25°C to +80°C Moved: -25°C to +80°C cable with PVC jacket Fixed installation: -40°C to +80°C Moved: -20°C to +60°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC jacket					
2170886	ETHERLINE® PN Cat.5 Y FLEX FC	2 x 2 x AWG22/7	6.8	31.3	67
FRNC outer sheath					
2170890	ETHERLINE® PN Cat.5 FRNC FLEX FC	2 x 2 x AWG22/7	6.8	31.2	65

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA RJ45F Cat.6_A refer to page 462
- EPIC® DATA M12D refer to page 464
- FC STRIP stripping tool refer to page 1002

**ETHERLINE® PN Cat.5 FD**

Highly flexible application

**Info**

- Highly flexible application
- For PROFINET applications

Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- Power chain applications
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- CAT.5-Performance
- PUR outer sheath is highly resistant to mineral oils and abrasion
- Flame-retardant according IEC 60332-1-2
- Optimized cable construction for power chain use
- Broad usages due to halogen-free materials

Norm references / Approvals

- UL/CSA type CMX (UL 444)

Product Make-up

- Fine-wire strand made of tinned-copper wires
- Star quad
- Colour-coded in accordance with PROFINET for Cat.5 applications
- Inner sheath: thermoplastic copolymer (FRNC)
- Overall screening with copper braid and plastic-laminated aluminium foil
- PUR outer sheath, halogen-free
- Colour: green (based on RAL 6018)

Technical data

ETIM 5.0 Class-ID: EC000829
ETIM 5.0 Class-Description:
Signal-/telecommunications cable



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Flexing: 8 x outer diameter
Fixed installation: 5 x outer diameter



Test voltage
Core/core: 700 V
Core/screen: 700 V



Characteristic impedance
100 Ohm +/- 15%



Temperature range
Fixed installation: -30°C to +70°C
Flexing: -20°C to +60°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® PN Cat.5 FD					
2170894	ETHERLINE® FD P FC CAT.5	2 x 2 x AWG22/7	6.8	31.3	63

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA M12D refer to page 464



ETHERLINE® TORSION Cat. 5

Highly flexible application



Info

- Industrial Ethernet Cable, 2-pair, suitable for torsion stress
- For PROFINET applications

Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- Industrial Ethernet Cable, 2-pair, suitable for torsion stress
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- Many applications with Industrial Ethernet, e.g. PROFINET, i.e. fixed installation, flexible use as well as TORSION.
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 55 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- Cable suitable for high torsion stress. Tested with more than 1 million bending cycles and a right/left movement of 180° per metre.
- Outer sheath with high abrasion-resistance
- Broad usages due to halogen-free materials
- PUR outer sheath is highly resistant to mineral oils and abrasion

Norm references / Approvals

- UL AWM (Style 21161)
- Halogen-free according to VDE 0472-815
- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- Stranded conductor, tinned
- AWG 22 (19-wire)
- PE core insulation
- Star quad
- Screening: wrapped with braided tinned-copper wires
- Non-woven wrapping
- PUR outer sheath, green (RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage max. 100 V (not for power applications)
	Minimum bending radius Installation: 5 x outer diameter
	Test voltage 700 V
	Characteristic impedance 100 ± 15 Ohm (> 1 MHz)
	Temperature range -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® TORSION Cat. 5					
2170888	ETHERLINE® TORSION CAT.5	2 x 2 x AWG22/19	6.8	31.3	52

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA HS RJ45F Cat.6_A refer to page 464
- Multipurpose shears A and B refer to page 998
- SMART STRIP stripping tool



ETHERLINE® Y Cat.5e BK 2x2AWG22/7

Flexible application

LAPP KABEL STUTTGART ETHERLINE® Y Cat.5e SUN RES



Info

- For PROFINET applications
- CAT.5-Performance

Benefits

- UV and weather-resistant in black
- Can be used in dry or damp rooms
- Screened against interference
- Suitable for outdoor use, UV-resistant
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- Many applications with Industrial Ethernet, e.g. PROFINET type B, i.e. fixed installation and flexible use.
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- PVC compound TM2 acc. to EN 50363-4-1
- Resistant to acids, alkalis and certain oils at room temperature
- Flame retardant acc. to IEC 60332-1-2
- CAT.5-Performance

Product Make-up

- Stranded conductor, 7-wire, bare
- Core insulation: Based on Polyolefin
- Colour-coded in accordance with PROFINET for Cat.5 applications
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- PVC outer sheath, black

Technical data



ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: 10 x outer diameter
Flexing: 15 x outer diameter



Test voltage
Core/core: 1000 V
Core/screen: 500 V



Characteristic impedance
100 ± 15 Ohm (> 1 MHz)



Temperature range
Flexing: -10°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® Y Cat.5e BK 2x2AWG22/7					
2170901	ETHERLINE® Y CAT.5e BK 2x2xAWG22/7	2 x 2 x AWG22/7	6.5	30.4	59

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ETHERLINE® PN FLEX refer to page 419

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA HS RJ45F Cat.6_A refer to page 464
- EPIC® DATA M12D refer to page 464
- DATA STRIP stripping tool refer to page 1001



ETHERLINE® Cat.5e 105 plus

Flexible application



Info

- For PROFINET applications
- Extended temperature range



Benefits

- No need for additional cable protection against high temperatures
- High temperature resistance
- Industrial use
- Premium screening against electromagnetic interference
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- For installation in hollow shaft between gear units and pitch system
- Suitable for fixed installation and occasionally flexible use in high temperature areas
- Max. cable length für 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications
- Wiring of machines, tools, devices, appliances and control cabinets

Product features

- Optimum EMC protection
- Permanent load up to +105°C, temporary load +120°C

Norm references / Approvals

- Electrical requirements acc. to IEC 61156-5

Product Make-up

- Stranded conductor, 7-wire, bare
- Core insulation: PE
- Colour-coded in accordance with PROFINET for Cat.5 applications
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: TPE-based
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000829 ETIM 5.0 Class-Description: Signal-/telecommunications cable
	Minimum bending radius Fixed installation: 10 x outer diameter Flexing: 15 x outer diameter
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Fixed installation: -40°C to +105°C occasionally flexing: -30°C to +105°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)
ETHERLINE® Cat.5e 105 plus				
2170636	ETHERLINE Cat.5e 105 plus	2x2xAWG22/7	6.5	30.4

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA RJ45F Cat.6_A refer to page 462
- EPIC® DATA M12D refer to page 464



ETHERLINE® MARINE FRNC FC CAT.5

Flexible application

LAPP KABEL STUTTGART ETHERLINE® MARINE FRNC FC Cat.5



Info

- Certified for maritime applications
- Flexible use in conjunction with light mechanical stress

Benefits

- Can be used for Industrial Ethernet in harsh industrial environments
- For use in dry, damp and wet rooms
- Premium screening against electromagnetic interference
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- Shipbuilding
- Wiring of machines, tools, devices, appliances and control cabinets
- Suitable for EtherCAT and EtherNet/IP applications
- Onshore and offshore applications
- Max. cable length für 100 Mbit/s is 85 m

Product features

- High flame retardancy in accordance with IEC 60332-3 and FT4
- CAT.5-Performance
- Fast Connect (FC) cable design

Norm references / Approvals

- CMG UL/CSA certification 75°C or PLTC, Sun Res
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test

Product Make-up

- Fine-wire strand made of tinned-copper wires
- Colour-coded in accordance with PROFINET for Cat.5 applications
- Star quad
- Inner sheath: thermoplastic copolymer (FRNC)
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Halogen-free and flame-retardant FRNC outer sheath
- Colour: green (based on RAL 6018)

Technical data



ETIM 5.0 Class-ID: EC000829
ETIM 5.0 Class-Description:
Signal-/telecommunications cable



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: 3 x outer diameter
Flexing: 7.5 x outer diameter



Characteristic impedance
100 Ohm +/- 15%



Temperature range
Operating temperature: -25°C to +70°C
During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® MARINE FRNC FC CAT.5					
2170889	ETHERLINE® MARINE FRNC FC CAT.5	2 x 2 x AWG22/7	6.5	32	68

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA M12D refer to page 464
- FC STRIP stripping tool refer to page 1002



ETHERLINE® Cat.5 ARM

Fixed installation



Info

- Industrial Ethernet cable
- CAT.5-Performance
- Suitable for outdoor use and direct burial

Benefits

- Can be used for Industrial Ethernet in harsh industrial environments
- EMC-optimised design
- With armouring for improved rodent protection
- Screened against interference
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Application range

- Suitable for outdoor use, UV-resistant
- Suitable for direct burial
- Max. cable length für 100 Mbit/s is 100 m
- PROFINET application Type C but for fixed installation
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- Fast Connect (FC) cable design

Product Make-up

- Solid and bare copper conductor
- Core insulation: PE
- Colour-coded in accordance with PROFINET for Cat.5 applications
- Star quad
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Inner sheath made of PVC (green RAL6018)
- 2 layer galvanzid steel tape
- Outer sheath made of black polyethylene (PE)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Fixed installation: 10 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 2000 V Core/screen: 2000 V
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Operation: -40 °C to +70 °C During installation: -20 °C to +60 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Fixed installation					
2170496	ETHERLINE® Cat.5 ARM	2 x 2 x AWG22/1	6.7 / 9.8	30.4	124

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA AX RJ45 Cat.6, IP68 refer to page 463
- EPIC® DATA M12D refer to page 464



ETHERLINE® Cat.5 FRNC HYBRID

Flexible use

LAPP KABEL STUTTGART ETHERLINE® FRNC HYBRID



Info

- HYBRID: cable for data transmission + power supply

Benefits

- Industrial use
- Screened against interference

Application range

- Industrial Ethernet cable
- 2pair: 10/100 Mbit/s for Industrial Ethernet
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- Max. cable length for 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- Flame-retardant according IEC 60332-1-2
- HYBRID: cable for data transmission + power supply
- Robust, halogen-free outer sheath
- CAT.5-Performance

Norm references / Approvals

- UL AWM Style 21282

Product Make-up

- Cores for Power Supply
4 x 1.5 mm² (AWG 16)
- Data transfer: braided conductor, 7-wire, bare
- Pair screening: wrapped with foil and braided copper wires
- Twisting: data pairs and power supply pairs twisted together
- Overlapping plastic tape
- FRNC outer sheath
- Colour: green (based on RAL 6018)

Technical data



ETIM 5.0 Class-ID: EC000829

ETIM 5.0 Class-Description:

Signal-/telecommunications cable



Minimum bending radius

Occasional flexing: 10 x outer diameter

Fixed installation: 5 x outer diameter



Test voltage

See data sheet



Characteristic impedance

100 Ohm ± 15%



Temperature range

Operation: -20 °C to +70 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Flexible use					
2170887	ETHERLINE® Cat.5 FRNC HYBRID	2x2xAWG22/7 + 4x1.5	10.6	94.2	153

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

**ETHERLINE® CAT.6 FD**

Highly flexible application

**Info**

- CAT.6 for drag chain!

LAPP KABEL STUTTGART ETHERLINE® Cat.6 FD 4x2xAWG26/19

**Benefits**

- Highly flexible data cable with PUR outer sheath, meets the highest service life requirements, even under harsh climatic conditions.
- Premium screening against electromagnetic interference

Application range

- For use in drag chains and moving machinery parts in dry or damp rooms
- Only for patch cable applications (max. 60 m)
- Suitable for EtherCAT and EtherNet/IP applications
- Plant engineering, machinery manufacturing
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet

Product features

- Flame-retardant according IEC 60332-1-2
- PUR outer sheath is resistant to most oils and hydraulic fluids
- CAT.6 for drag chain!
- LAN Cat.6 cables are specified up to 350 MHz
- Designed for 1...2 million bending/unbending cycles in the drag chain

Norm references / Approvals

- UL/CSA type CMX (UL 444)

Product Make-up

- Stranded conductor, tinned
- AWG 26 (19-wire)
- PP core insulation
- Inner sheath: thermoplastic copolymer (FRNC)
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- PUR outer sheath, halogen-free
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage max. 100 V (not for power applications)
	Minimum bending radius Fixed installation: 4 x outer diameter Flexing: 7.5 x outer diameter
	Test voltage 700 V
	Characteristic impedance At 1 - 100 MHz: 100 ± 15 Ohm
	Temperature range Fixed installation: -40°C to +80°C Flexing: -30°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® CAT.6 FD					
2170488	ETHERLINER CAT.6 FD	4 x 2 x AWG26/19	7.8	31.7	63

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- DATA STRIP stripping tool refer to page 1001



ETHERLINE® Cat.6_A

Fixed installation



Info

- Industrial Ethernet cable
- For PROFINET applications with 4 pairs
- CAT.6_A qualified for 10Gbit/s

Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet

Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 100 m
max. cable length for 10 Gbit/s is 100 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- PUR outer sheath is highly resistant to mineral oils and abrasion
- Robust, halogen-free outer sheath
- The oil-resistant PVC sheath enables usage in industrial environments
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Product Make-up

- Solid bare copper wire AWG22
- Core insulation made of polyethylene (PE)
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Fixed installation: 10 x outer diameter
	Characteristic impedance 100 ohm at 1 - 100 MHz
	Temperature range cable with PUR jacket Fixed installation: VDE -30°C to +80°C; UL/CSA -30°C to +80°C flexing: VDE -5°C to +50°C; UL/CSA -5°C to +80°C cable halogenfree compound Fixed installation: -25°C to +80°C cable with PVC jacket Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Halogen-free jacket					
2170466	ETHERLINE® Cat.6 _A H	4 x 2 x AWG22/1	9.0	53	99
PUR outer sheath, halogen-free					
2170465	ETHERLINE® CAT.6 _A P	4 x 2 x AWG22/1	9.0	53	91
PVC outer sheath					
2170464	ETHERLINE® Cat.6 _A Y	4 x 2 x AWG22/1	9.0	53	98

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA RJ45F Cat.6_A refer to page 462
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466
- DATA STRIP stripping tool refer to page 1001



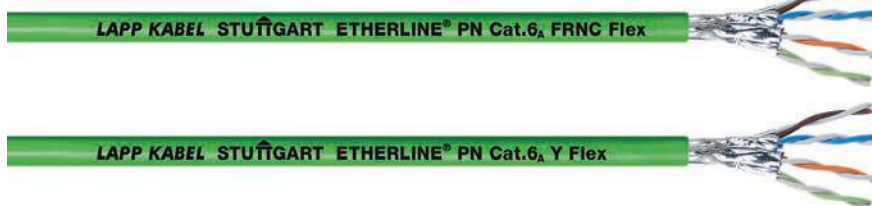
ETHERLINE® PN Cat.6_A FLEX

Flexible use



Info

- For PROFINET applications with 4 pairs
- CAT.6_A qualified for 10Gbit/s



Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet

Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- At 100 Mbit/s: max 90 m cable length
- Wiring of machines, tools, devices, appliances and control cabinets
- Suitable for EtherCAT and EtherNet/IP applications
- For flexible applications (7-wire stranded conductor)

Product features

- CAT.6_A for flexible application, qualified for 10Gbit/s
- Meets the requirements according to CAT.6_A, ISO/IEC 11801 and EN 50173
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- The oil-resistant PVC sheath enables usage in industrial environments

Norm references / Approvals

- PVC cable is UL/CSA-certified (CMG)
- ETHERLINE® PN Cat.6_A Y FLEX: ECOLAB® Industry standard for innovation and efficiency in the field of professional cleaning and disinfection
- FRNC cable is UL/CSA-certified (CM)

Product Make-up

- 7-wire tinned stranded copper conductor
- Core insulation: PE
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- PVC or FRNC jacket material
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000829 ETIM 5.0 Class-Description: Signal-/telecommunications cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 8 x outer diameter
	Characteristic impedance 100 ± 15 Ohm (> 1 MHz)
	Temperature range cable halogenfree compound Fixed installation: -25°C to +80°C cable with PVC jacket Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC outer sheath					
2170930	ETHERLINE PN Cat.6 _A Y FLEX	4 x 2 x AWG23/7	9.0	48	92
FRNC outer sheath					
2170931	ETHERLINE PN Cat.6 _A FRNC FLEX	4 x 2 x AWG23/7	9.0	48	87

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
 Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
 Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA RJ45F Cat.6_A refer to page 462
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466
- DATA STRIP stripping tool refer to page 1001

**ETHERLINE® FD CAT.6_A**

For highly flexible applications

**Info**

- CAT.6_A for drag chain, qualified for 10Gbit/s
- For PROFINET applications with 4 pairs

Benefits

- For use in power chains and moving machinery parts in dry or damp rooms
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet
- Premium screening against electromagnetic interference
- Can be used for Industrial Ethernet in harsh industrial environments

Application range

- For highly flexible applications (e.g. power chains)
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length für 100 Mbit/s is 85 m
- Max. cable length für 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- PUR version is halogen-free according to IEC 60754
- Oil-resistant acc. IEC 60811-2-1
- CAT.6_A for drag chain, qualified for 10Gbit/s
- Meets the requirements according to CAT.6_A, ISO/IEC 11801 and EN 50173
- Min. 2.5 million bending cycles in the power chain

Norm references / Approvals

- Electrical requirements acc. to IEC 61156-6
- PUR: UL/CSA-certified (CMX)
- PUR versions: UL AWM Style 21576
- PVC cable is UL/CSA-certified (CM)
- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- 7-wire tinned stranded copper conductor
- Core insulation: Based on Polyolefin
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath: PUR, halogen-free/PVC
- Colour: green (based on RAL 6018)

Technical data

ETIM 5.0 Class-ID: EC000829
ETIM 5.0 Class-Description:
Signal-/telecommunications cable

**Minimum bending radius**

Flexing: 15 x outer diameter
Fixed installation: 8 x cable diameter

**Characteristic impedance**

100 Ohm

**Temperature range**

Fixed installation
PVC: -40°C bis +80°C
PUR: -40°C bis +80°C
Flexing
PVC: -10°C to +70°C
PUR: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC sheath					
2170485	ETHERLINE® FD CAT.6 _A	4x2xAWG24/7	9.0	44	88
PUR outer sheath, halogen-free					
2170484	ETHERLINE® FD P CAT.6 _A	4x2xAWG24/7	9.0	44	90

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466



ETHERLINE® TORSION Cat.6_A

Highly flexible application

Info

- Industrial Ethernet Cable, 4-pair, suitable for torsion stress
- CAT.6_A qualified for 10Gbit/s
- For PROFINET applications

LAPP KABEL STUTTGART ETHERLINE® TORSION P Cat.6_A 4x2xAWG24/7



Benefits

- Many applications with Industrial Ethernet, e.g. PROFINET, i.e. fixed installation, flexible use as well as TORSION.
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet
- Premium screening against electromagnetic interference
- Can be used for Industrial Ethernet in harsh industrial environments

Application range

- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- Can be used for Industrial Ethernet in harsh industrial environments
- Max. cable length für 100 Mbit/s is 85 m
- Max. cable length für 100 Mbit/s is 85 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- PUR version is halogen-free according to IEC 60754
- Oil-resistant acc. IEC 60811-2-1
- Cable suitable for high torsion stress. Tested with more than 1 million bending cycles and a right/left movement of 180° per metre.
- Meets the requirements according to CAT.6_A, ISO/IEC 11801 and EN 50173

Norm references / Approvals

- Electrical requirements acc. to IEC 61156-6
- PUR: UL/CSA-certified (CMX)
- PUR versions: UL AWM Style 21576
- PVC cable is UL/CSA-certified (CM)
- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- 7-wire tinned stranded copper conductor
- Core insulation made of polyethylene (PE)
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath: PUR, halogen-free/PVC
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC000829 ETIM 5.0 Class-Description: Signal-/telecommunications cable
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 8 x cable diameter
	Characteristic impedance 100 Ohm
	Temperature range Fixed installation PVC: -40°C bis +80°C PUR: -40°C bis +80°C Flexing PVC: -10°C to +70°C PUR: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)
PVC jacket				
2170482	ETHERLINE® TORSION Y CAT6 _A	4 x 2 x AWG24/7	9.0	44
PUR outer sheath, halogen-free				
2170483	ETHERLINE® TORSION P CAT6 _A	4 x 2 x AWG24/7	9.0	44

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466



ETHERLINE® Cat.7

Fixed installation



Info

- Industrial Ethernet cable
- For PROFINET applications with 4 pairs
- Cat.7 qualified for 10Gbit/s

Benefits

- Can be used in dry or damp rooms
- Screened against interference
- Can be used for Industrial Ethernet in harsh industrial environments
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet

Application range

- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- Wiring of machines, tools, devices, appliances and control cabinets
- Max. cable length for 100 Mbit/s is 100 m
max. cable length for 10 Gbit/s is 100 m
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- PUR outer sheath is highly resistant to mineral oils and abrasion
- Robust, halogen-free outer sheath
- The oil-resistant PVC sheath enables usage in industrial environments
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Product Make-up

- Solid bare copper wire AWG22
- Core insulation made of polyethylene (PE)
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Colour: green (based on RAL 6018)

Technical data



ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable



Peak operating voltage
(not for power applications) 125 V



Minimum bending radius
Fixed installation: 10 x outer diameter



Characteristic impedance
100 ohm at 1 - 100 MHz



Temperature range
fixed installation
PVC: -30°C to +80°C
PUR: -40°C to +80°C
cable halogenfree compound
Fixed installation: -25°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Halogen-free jacket					
2170476	ETHERLINE® CAT.7 H	4 x 2 x AWG22/1	9.0	53	99
PUR outer sheath, halogen-free					
2170475	ETHERLINE® Cat.7 P	4 x 2 x AWG22/1	9.0	53	91
PVC outer sheath					
2170474	ETHERLINE® Cat.7 Y	4 x 2 x AWG22/1	9.0	53	98

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466



ETHERLINE® HEAT 6722

Info

- Designed according to ISO 6722
- Tested acc.to ECE-R 118.01

LAPP KABEL STUTTGART ETHERLINE® HEAT Cat.5e FL9YBC11Y 4x2x0,22snv

LAPP KABEL STUTTGART ETHERLINE® HEAT Cat.6a FL09YBC11Y 4x2x0,22sn

LAPP KABEL STUTTGART ETHERLINE® HEAT Cat.7 FL09YBC11Y 4x2x0,22sn

Benefits

- Easy to strip and dismantle
- Extended temperature range
- Good resistance to oil, petrol, acids and alkalis
- Abrasion and cut-resistant, halogen-free, oil-resistant
- Reduction of flame propagation, density and toxicity of smoke gases in event of fire

Application range

- For flexible applications (7-wire stranded conductor)
- For fixed, flexible and protected installations inside buses
- Suitable for connecting to of e.g. camera systems, enter-/ infotainment for passengers, ticketing systems
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet

Product features

- Halogen-free according to VDE 0472-815
- Good chemical resistance
- Flame retardant acc. to ISO 6722-1
- Temperature class B on the basis of ISO 6722-1

Norm references / Approvals

- DIN/ISO 6722
- Electrical requirements acc. to IEC 61156-6
- Tested acc.to ECE-R 118.01
- ISO 14572, 5.21
- LV 112-1, LV 212-2, LV 213-2

Product Make-up

- Stranded tinned 7-wire conductor
- Core insulation: Based on Polyolefin
- Colour-coded in accordance with EIA/TIA 568A and B
- Cat.5e: SF/UTP - copper braid and foil screening as overall screening
- Cat.6/Cat.7: S/FTP - copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath: PUR compound, halogen-free
- Outer sheath colour:
Cat.5e green (RAL 6018)
Cat.6a yellow (RAL 1003)
Cat.7 blue (RAL 5021)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 10 x outer diameter
	Characteristic impedance nom. 100 Ohm acc. to IEC 61156-6
	Temperature range Flexing: -30 °C to +105 °C Fixed installation: -40 °C to +105 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® HEAT 6722					
2170850	ETHERLINE® Cat. 5e FL9YBC11Y 4x2x0,22sn	4x2xAWG24/7	7.7	38	72
2170581	ETHERLINE® Cat. 6a FL09YBC11Y 4x2x0,22sn	4x2xAWG24/7	8.1	38	77
2170582	ETHERLINE® Cat. 7 FL09YBC11Y 4x2x0,22sn	4x2xAWG24/7	8.1	38	77

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

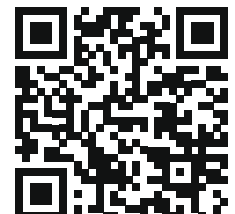
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6a refer to page 462
- EPIC® DATA 90 RJ45 Cat.6a refer to page 463
- EPIC® DATA M12X refer to page 465

Whitepaper - „More stringent fire protection regulation for cabling in buses“
Read the whitepaper to learn what is new and important about the new EU norm ECE-R 110.01 for cabling in buses.





ETHERLINE® TRAY

LAPP KABEL STUTTGART ETHERLINE® TRAY Cat.5e Y 4x2xAWG22

Benefits

- Wide application range due to multiple certifications
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet

Application range

- Suitable for EtherNet/IP applications
- Fixed installation
- Industrial machinery; plant engineering
- Can be used for Industrial Ethernet in harsh industrial environments
- Methods of Deployment: laying in trunking, ducts, trays, building riser

Product features

- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I

Norm references / Approvals

- C(UL)us Typ CMG (75°C) acc.to UL 444 / CSA 22.2
- C(UL)us Typ CMR acc.to UL 444
- C(UL)us Typ PLTC acc. to UL 13
- UL-AWM-Style 2570
- Electrical requirements acc. to IEC 61156-5 Type III

Product Make-up

- Stranded tinned 7-wire conductor
- Core insulation: Based on Polyolefin
- Colour-coded in accordance with EIA/TIA 568A and B
- TP structure
- Cat.5e: SF/UTP - copper braid and foil screening as overall screening
- PVC outer sheath

Info

- PLTC (power limited tray cable) for protected use on cable trays

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 10 x outer diameter
	Characteristic impedance 100 ohm at 1 - 100 MHz
	Temperature range Occasional flexing: -25°C to +80°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® TRAY					
2170450	ETHERLINE® TRAY Cat.5e Y 4x2x22AWG	4x2xAWG22/7	9.6	59.368	119

Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® FIRE Cat.5e PH120

LAPP KABEL STUTTGART ETHERLINE® FIRE Cat.5e PH120 4x2xAWG24/1

Benefits

- Ensures that the cable can still transmit data during and after a fire for 120 min (according to EN50200)
- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference

Application range

- In industrial areas that use fire as a tool
- Highly combustible or fire-prone areas
- For fixed installation
- For indoor use

Product features

- Fire behaviour:
 - Halogen-free (IEC 60754-1 & EN50267-2-1)
 - Flame-retardant (IEC 60332-1)
 - Fire retardant (IEC 60332-3-24)
 - Low smoke density (IEC 61034-2)
 - Circuit integrity (EN50200); 120 min
- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D

Product Make-up

- Solid bare copper conductor
- Core insulation: Based on Polyolefin
- Each insulation will be wrapped with a special tape (anti-fire barrier)
- Twisting: 2 twisted-pair cores, stranding from 4 pairs
- F/UTP: foil screening as overall screening
- Halogen-free and flame-retardant FRNC outer sheath, colour: red (similar to RAL3000)

Info

- Isolation integrity for at least 120 minutes in the event of fire

Technical data

	ETIM 5.0 Class-ID: EC000829 ETIM 5.0 Class-Description: Signal-/telecommunications cable
	Peak operating voltage (not for power applications) 125 V
	Minimum bending radius Fixed installation: 15 x outer diameter
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Operation: -20 °C to +70 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ETHERLINE® FIRE Cat.5e PH120					
2170905	ETHERLINE® FIRE Cat.5e PH120	4 x 2 x AWG23/1	8.3	24	75

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® ROBUST

Flexible use



Info

- For PROFINET applications
- Good chemical resistance



Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with plant, animal or synthetic-based organic substances, oils, greases, waxes and the related emulsions
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- For flexible applications (7-wire stranded conductor)
- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702

Product features

- Halogen-free materials
- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396
- Low smoke density according to IEC 61034-2

Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: Based on Polyolefin
- Screening: wrapped with braided tinned-copper wires
- Outer sheath made of special TPE
- Colour: black

Technical data

	ETIM 5.0 Class-ID: EC000829 ETIM 5.0 Class-Description: Signal-/telecommunications cable
	Minimum bending radius Flexing: 10 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Occasional flexing: -40°C to +80°C Fixed installation: -50°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PROFINET Cat.5e					
2170451	ETHERLINE ROBUST PN Cat.5	2x2xAWG22/7	6.8	30.4	50
PROFINET Cat.7					
2170452	ETHERLINE® ROBUST PN Cat.7	4x2xAWG23/7	9.0	48	75
Industrial Ethernet Cat.7					
2170453	ETHERLINE® ROBUST Cat.7 FLEX	4x2xAWG26/7	6,5	27	36

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA M12D refer to page 464
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466



ETHERLINE® ROBUST FR



Info

- For PROFINET applications
- Flame-retardant

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Good resistance to cold and hot water as well as water-soluble cleaning agents
- Well-suited to frequent steam cleaning

Application range

- For flexible applications (7-wire stranded conductor)
- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For industrial secondary and tertiary cabling according to EN 50173-3 ISO/IEC 24702
- Suitable for EtherCAT and EtherNet/IP applications

Product features

- High-quality, double screening ensures high transmission reliability in areas with electromagnetic interference
- Flame retardance makes it suitable for indoor and outdoor installations
- 2pair: 10/100 Mbit/s for Industrial Ethernet
- 4pair: 100Mbit/s up to 10 Gbit/s for Industrial Ethernet
- Many applications with Industrial Ethernet, e.g. PROFINET type B, i.e. fixed installation and flexible use.

Norm references / Approvals

- UV-resistant according to ISO 4892-2 and ozone-resistant according to EN 50396
- Flame-retardant according to IEC 60332-1-2

Product Make-up

- Stranded 7-wire bare conductor
- Core insulation: Based on Polyolefin
- Screening: wrapped with braided tinned-copper wires
- Outer sheath made of special TPE
- Colour: black

Technical data



ETIM 5.0 Class-ID: EC000829
ETIM 5.0 Class-Description:
Signal-/telecommunications cable



Minimum bending radius

Flexing: 10 x outer diameter
Fixed installation: 4 x Outer diameter



Characteristic impedance

100 ohm at 1 - 100 MHz



Temperature range

Occasional flexing: -40°C to +80°C
Fixed installation: -50°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PROFINET Cat.5e					
2170454	ETHERLINE® ROBUST PN FR Cat.5	2x2xAWG22/7	6.8	30.4	55
PROFINET Cat.7					
2170455	ETHERLINE® ROBUST PN FR Cat.7	4x2xAWG23/7	9.0	48	80
Industrial Ethernet Cat.7					
2170456	ETHERLINE® ROBUST FR Cat.7 FLEX	4x2xAWG26/7	6,5	27	40

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

PROFINET® is a registered trademark of the PNO (PROFIBUS user organisation)

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA PN AX RJ45 refer to page 461
- EPIC® DATA PN 90 RJ45 refer to page 461
- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA AX RJ45 Cat.6_A IP68 refer to page 463
- EPIC® DATA M12D refer to page 464
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466



ETHERLINE® P Flex Cat.5e M12

Industrial Ethernet Patchcord M12



Info

- Industrial Ethernet cable
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For flexible applications (7-wire stranded conductor)
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- Flexible fine-wire copper conductor
- Twisted pair construction permits largely interference-free operation (decoupling).
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: water blue (RAL 5021)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 8 x outer diameter
	Protection rating IP 67 / IP 69
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Flexing: -5°C to +50°C (UL: +80°C) Fixed installation: -30°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug M12				
2171097	IE-5-M12D-S-1-P-2-26-7-M12D-S	2x2xAWG26	1	19
2171098	IE-5-M12D-S-2-P-2-26-7-M12D-S	2x2xAWG26	2	38
2171099	IE-5-M12D-S-3-P-2-26-7-M12D-S	2x2xAWG26	3	57
2171100	IE-5-M12D-S-5-P-2-26-7-M12D-S	2x2xAWG26	5	95
2171101	IE-5-M12D-S-10-P-2-26-7-M12D-S	2x2xAWG26	10	190
2171102	IE-5-M12D-S-20-P-2-26-7-M12D-S	2x2xAWG26	20	380
straight plug M12 on free conductor end				
2171103	IE-5-M12D-S-1-P-2-26-7-OE	2x2xAWG26	1	19
2171104	IE-5-M12D-S-2-P-2-26-7-OE	2x2xAWG26	2	38
2171105	IE-5-M12D-S-3-P-2-26-7-OE	2x2xAWG26	3	57
2171106	IE-5-M12D-S-5-P-2-26-7-OE	2x2xAWG26	5	95
2171107	IE-5-M12D-S-10-P-2-26-7-OE	2x2xAWG26	10	190
2171108	IE-5-M12D-S-20-P-2-26-7-OE	2x2xAWG26	20	380

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® P Flex Cat.5e M12-RJ45

Industrial Ethernet Patchcord M12/RJ45



Info

- Industrial Ethernet cable
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For flexible applications (7-wire stranded conductor)
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- Flexible fine-wire copper conductor
- Twisted pair construction permits largely interference-free operation (decoupling).
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: water blue (RAL 5021)
- Pre-assembled patchcords with M12 connector, D-coded and RJ45-connector
- 4 pole M12 connector with vibration protection

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius

Flexing: 15 x outer diameter
Fixed installation: 8 x outer diameter



Protection rating

M12 - IP 67 / IP 69
RJ45 - IP 20



Characteristic impedance

100 Ohm +/- 15%



Temperature range

Flexing: -5°C to +50°C (UL: +80°C)
Fixed installation: -30°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug RJ45				
2171109	IE-5-M12D-S-1-P-2-26-7-RJ45	2x2XAWG26	1	19
2171110	IE-5-M12D-S-2-P-2-26-7-RJ45	2x2XAWG26	2	38
2171111	IE-5-M12D-S-3-P-2-26-7-RJ45	2x2XAWG26	3	57
2171112	IE-5-M12D-S-5-P-2-26-7-RJ45	2x2XAWG26	5	95
2171113	IE-5-M12D-S-10-P-2-26-7-RJ45	2x2XAWG26	10	190
2171114	IE-5-M12D-S-20-P-2-26-7-RJ45	2x2XAWG26	20	380

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

**ETHERLINE® P Flex Cat.5e RJ45**

Industrial Ethernet Patchcord RJ45

**Info**

- Industrial Ethernet cable
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For flexible applications (7-wire stranded conductor)
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/ 100 Mbit/s for Industrial Ethernet
- 4pair: 10/ 100/ 1000 Mbit/s for Industrial Ethernet

Product Make-up

- Flexible fine-wire copper conductor
- Twisted pair construction permits largely interference-free operation (decoupling).
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: water blue (RAL 5021)
- Pre-assembled patchcord with RJ45 connectors

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 8 x outer diameter
	Protection rating IP 20
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Flexing: -5°C to +50°C (UL: +80°C) Fixed installation: -30°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
2-pair: straight plug RJ45 on straight plug RJ45				
2171115	IE-5-RJ45-1-P-2-26-7-RJ45	2x2xAWG26	1	19
2171116	IE-5-RJ45-2-P-2-26-7-RJ45	2x2xAWG26	2	38
2171117	IE-5-RJ45-3-P-2-26-7-RJ45	2x2xAWG26	3	57
2171118	IE-5-RJ45-5-P-2-26-7-RJ45	2x2xAWG26	5	95
2171119	IE-5-RJ45-10-P-2-26-7-RJ45	2x2xAWG26	10	190
2171120	IE-5-RJ45-20-P-2-26-7-RJ45	2x2xAWG26	20	380
4-pair: straight plug RJ45 on straight plug RJ45				
2171501	IE-5-RJ45-1-P-4-26-7-RJ45	4x2xAWG26	1	25
2171502	IE-5-RJ45-2-P-4-26-7-RJ45	4x2xAWG26	2	50
2171503	IE-5-RJ45-3-P-4-26-7-RJ45	4x2xAWG26	3	75
2171504	IE-5-RJ45-5-P-4-26-7-RJ45	4x2xAWG26	5	125
2171505	IE-5-RJ45-10-P-4-26-7-RJ45	4x2xAWG26	10	250
2171506	IE-5-RJ45-20-P-4-26-7-RJ45	4x2xAWG26	20	500
4-pair: straight plug RJ45 on free conductor end				
2171507	IE-5-RJ45-1-P-4-26-7-OE	4x2xAWG26	1	25
2171508	IE-5-RJ45-2-P-4-26-7-OE	4x2xAWG26	2	50
2171509	IE-5-RJ45-3-P-4-26-7-OE	4x2xAWG26	3	75
2171510	IE-5-RJ45-5-P-4-26-7-OE	4x2xAWG26	5	125
2171511	IE-5-RJ45-10-P-4-26-7-OE	4x2xAWG26	10	250
2171512	IE-5-RJ45-20-P-4-26-7-OE	4x2xAWG26	20	500

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/ 100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® H Flex Cat.5e M12

Industrial Ethernet Patchcord M12



Info

- Industrial Ethernet cable
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For flexible applications (7-wire stranded conductor)
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- Flexible fine-wire copper conductor
- Twisted pair construction permits largely interference-free operation (decoupling).
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: halogen-free, flame-retardant compound
- Colour: water blue (RAL 5021)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius
Flexing: 15 x outer diameter
Fixed installation: 6 x cable diameter



Protection rating
IP 67 / IP 69



Characteristic impedance
100 Ohm +/- 15%



Temperature range
During installation: -5 °C to +60 °C
Fixed installation: -30 °C to +80 °C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug M12				
2171073	IE-5-M12D-S-1-H-2-26-7-M12D-S	2x2xAWG26	1	19
2171074	IE-5-M12D-S-2-H-2-26-7-M12D-S	2x2xAWG26	2	38
2171075	IE-5-M12D-S-3-H-2-26-7-M12D-S	2x2xAWG26	3	57
2171076	IE-5-M12D-S-5-H-2-26-7-M12D-S	2x2xAWG26	5	95
2171077	IE-5-M12D-S-10-H-2-26-7-M12D-S	2x2xAWG26	10	190
2171078	IE-5-M12D-S-20-H-2-26-7-M12D-S	2x2xAWG26	20	380
straight plug M12 on free conductor end				
2171079	IE-5-M12D-S-1-H-2-26-7-OE	2x2xAWG26	1	19
2171080	IE-5-M12D-S-2-H-2-26-7-OE	2x2xAWG26	2	38
2171081	IE-5-M12D-S-3-H-2-26-7-OE	2x2xAWG26	3	57
2171082	IE-5-M12D-S-5-H-2-26-7-OE	2x2xAWG26	5	95
2171083	IE-5-M12D-S-10-H-2-26-7-OE	2x2xAWG26	10	190
2171084	IE-5-M12D-S-20-H-2-26-7-OE	2x2xAWG26	20	380

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

**ETHERLINE® H Flex Cat.5e M12-RJ45**

Industrial Ethernet Patchcord M12/RJ45

**Info**

- Industrial Ethernet cable
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For flexible applications (7-wire stranded conductor)
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- Flexible fine-wire copper conductor
- Twisted pair construction permits largely interference-free operation (decoupling).
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: halogen-free, flame-retardant compound
- Colour: water blue (RAL 5021)
- Pre-assembled patchcords with M12 connector, D-coded and RJ45-connector
- 4 pole M12 connector with vibration protection

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 6 x outer diameter
	Protection rating M12 - IP 67 / IP 69 RJ45 - IP 20
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range During installation: -5 °C to +60 °C Fixed installation: -30 °C to +80 °C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug RJ45				
2171085	IE-5-M12D-S-1-H-2-26-7-RJ45	2x2xAWG26	1	19
2171086	IE-5-M12D-S-2-H-2-26-7-RJ45	2x2xAWG26	2	38
2171087	IE-5-M12D-S-3-H-2-26-7-RJ45	2x2xAWG26	3	57
2171088	IE-5-M12D-S-5-H-2-26-7-RJ45	2x2xAWG26	5	95
2171089	IE-5-M12D-S-10-H-2-26-7-RJ45	2x2xAWG26	10	190
2171090	IE-5-M12D-S-20-H-2-26-7-RJ45	2x2xAWG26	20	380

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® H Flex Cat.5e RJ45

Industrial Ethernet Patchcord RJ45



Info

- Industrial Ethernet cable
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Automation technology
- For indoor use
- For flexible applications (7-wire stranded conductor)
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet
- 4pair: 10/100/1000 Mbit/s for Industrial Ethernet

Product Make-up

- Flexible fine-wire copper conductor
- Twisted pair construction permits largely interference-free operation (decoupling).
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: halogen-free, flame-retardant compound
- Colour: water blue (RAL 5021)
- Pre-assembled patchcord with RJ45 connectors

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius

Flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter



Protection rating

IP 20



Characteristic impedance

100 Ohm +/- 15%



Temperature range

During installation: -5 °C to +60 °C
Fixed installation: -30 °C to +80 °C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/ 1.000 pieces)
2-pair: straight plug RJ45 on straight plug RJ45				
2171091	IE-5-RJ45-1-H-2-26-7-RJ45	2x2xAWG26	1	19
2171092	IE-5-RJ45-2-H-2-26-7-RJ45	2x2xAWG26	2	38
2171093	IE-5-RJ45-3-H-2-26-7-RJ45	2x2xAWG26	3	57
2171094	IE-5-RJ45-5-H-2-26-7-RJ45	2x2xAWG26	5	95
2171095	IE-5-RJ45-10-H-2-26-7-RJ45	2x2xAWG26	10	190
2171096	IE-5-RJ45-20-H-2-26-7-RJ45	2x2xAWG26	20	380
4-pair: straight plug RJ45 on straight plug RJ45				
2171513	IE-5-RJ45-1-H-4-26-7-RJ45	4x2xAWG26	1	25
2171514	IE-5-RJ45-2-H-4-26-7-RJ45	4x2xAWG26	2	50
2171515	IE-5-RJ45-3-H-4-26-7-RJ45	4x2xAWG26	3	75
2171516	IE-5-RJ45-5-H-4-26-7-RJ45	4x2xAWG26	5	125
2171517	IE-5-RJ45-10-H-4-26-7-RJ45	4x2xAWG26	10	250
2171518	IE-5-RJ45-20-H-4-26-7-RJ45	4x2xAWG26	20	500
4-pair: straight plug RJ45 on free conductor end				
2171519	IE-5-RJ45-1-H-4-26-7-OE	4x2xAWG26	1	25
2171520	IE-5-RJ45-2-H-4-26-7-OE	4x2xAWG26	2	50
2171521	IE-5-RJ45-3-H-4-26-7-OE	4x2xAWG26	3	75
2171522	IE-5-RJ45-5-H-4-26-7-OE	4x2xAWG26	5	125
2171523	IE-5-RJ45-10-H-4-26-7-OE	4x2xAWG26	10	250
2171524	IE-5-RJ45-20-H-4-26-7-OE	4x2xAWG26	20	500

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® EC Flex Cat.5e M8

Industrial Ethernet EC Patchcord M8

i Info

- For EtherCAT applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request



Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- Flexible use

Application range

- Suitable for use in industrial applications
- Especially for EtherCat applications
- For indoor use
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/ 100 Mbit/s for Industrial Ethernet

Product Make-up

- Stranded conductor, 7-wire, 2x2xAWG26/7
- Overall screening with copper braid and plastic-laminated aluminium foil
- Pre-assembled patchcords with M8 connectors
- Colour: green (based on RAL 6018)

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Fixed installation: 4 x outer diameter Flexing: 8 x outer diameter
	Protection rating IP 67
	Characteristic impedance 100 Ohm +- 15%
	Temperature range Fixed installation: -30°C to +80°C Flexing: -5°C to +50°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/ 1.000 pieces)
straight plug M8 on straight plug M8				
2171300	IE-EC-5-M8-S-0,5-Y-2-26-7-M8-S	2x2xAWG26	0.5	10
2171301	IE-EC-5-M8-S-1-Y-2-26-7-M8-S	2x2xAWG26	1	20
2171302	IE-EC-5-M8-S-2-Y-2-26-7-M8-S	2x2xAWG26	2	40
2171303	IE-EC-5-M8-S-3-Y-2-26-7-M8-S	2x2xAWG26	3	60
2171304	IE-EC-5-M8-S-5-Y-2-26-7-M8-S	2x2xAWG26	5	100
2171305	IE-EC-5-M8-S-7-Y-2-26-7-M8-S	2x2xAWG26	7	140
2171306	IE-EC-5-M8-S-10-Y-2-26-7-M8-S	2x2xAWG26	10	200
2171307	IE-EC-5-M8-S-15-Y-2-26-7-M8-S	2x2xAWG26	15	300
2171308	IE-EC-5-M8-S-20-Y-2-26-7-M8-S	2x2xAWG26	20	400
angled plug M8 on straight plug M8				
2171350	IE-EC-5-M8-A-0,5-Y-2-26-7-M8-S	2x2xAWG26	0.5	10
2171351	IE-EC-5-M8-A-1-Y-2-26-7-M8-S	2x2xAWG26	1	20
2171352	IE-EC-5-M8-A-2-Y-2-26-7-M8-S	2x2xAWG26	2	40
2171353	IE-EC-5-M8-A-3-Y-2-26-7-M8-S	2x2xAWG26	3	60
2171354	IE-EC-5-M8-A-5-Y-2-26-7-M8-S	2x2xAWG26	5	100
2171355	IE-EC-5-M8-A-7-Y-2-26-7-M8-S	2x2xAWG26	7	140
2171356	IE-EC-5-M8-A-10-Y-2-26-7-M8-S	2x2xAWG26	10	200
2171357	IE-EC-5-M8-A-15-Y-2-26-7-M8-S	2x2xAWG26	15	300
2171358	IE-EC-5-M8-A-20-Y-2-26-7-M8-S	2x2xAWG26	20	400
straight plug M8 on free conductor end				
2171320	IE-EC-5-M8-S-0,5-Y-2-26-7-OE	2x2xAWG26	0.5	10
2171321	IE-EC-5-M8-S-1-Y-2-26-7-OE	2x2xAWG26	1	20
2171322	IE-EC-5-M8-S-2-Y-2-26-7-OE	2x2xAWG26	2	40
2171323	IE-EC-5-M8-S-3-Y-2-26-7-OE	2x2xAWG26	3	60
2171324	IE-EC-5-M8-S-5-Y-2-26-7-OE	2x2xAWG26	5	100
2171325	IE-EC-5-M8-S-7-Y-2-26-7-OE	2x2xAWG26	7	140
2171326	IE-EC-5-M8-S-10-Y-2-26-7-OE	2x2xAWG26	10	200
2171327	IE-EC-5-M8-S-15-Y-2-26-7-OE	2x2xAWG26	15	300
2171328	IE-EC-5-M8-S-20-Y-2-26-7-OE	2x2xAWG26	20	400
angled plug M8 on free conductor end				
2171370	IE-EC-5-M8-A-0,5-Y-2-26-7-OE	2x2xAWG26	0.5	10
2171371	IE-EC-5-M8-A-1-Y-2-26-7-OE	2x2xAWG26	1	20
2171372	IE-EC-5-M8-A-2-Y-2-26-7-OE	2x2xAWG26	2	40
2171373	IE-EC-5-M8D-A-3-Y-2-26-7-OE	2x2xAWG26	3	60
2171374	IE-EC-5-M8-A-5-Y-2-26-7-OE	2x2xAWG26	5	100
2171375	IE-EC-5-M8-A-7-Y-2-26-7-OE	2x2xAWG26	7	140
2171376	IE-EC-5-M8-A-10-Y-2-26-7-OE	2x2xAWG26	10	200
2171377	IE-EC-5-M8-A-15-Y-2-26-7-OE	2x2xAWG26	15	300
2171378	IE-EC-5-M8-A-20-Y-2-26-7-OE	2x2xAWG26	20	400

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® EC FD Cat.5e M8

Industrial Ethernet EC Patchcord M8



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M8 connectors

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius
Flexing: 8 x outer diameter
Fixed installation: 4 x outer diameter



Protection rating
IP 67



Characteristic impedance
100 Ohm +/- 15%



Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M8 on straight plug M8				
2171700	IE-EC-5-M8-S-0,5-P-2-26-FD-M8-S	2x2xAWG26	0,5	10
2171701	IE-EC-5-M8-S-1-P-2-26-FD-M8-S	2x2xAWG26	1	20
2171702	IE-EC-5-M8-S-2-P-2-26-FD-M8-S	2x2xAWG26	2	40
2171703	IE-EC-5-M8-S-3-P-2-26-FD-M8-S	2x2xAWG26	3	60
2171704	IE-EC-5-M8-S-5-P-2-26-FD-M8-S	2x2xAWG26	5	100
2171705	IE-EC-5-M8-S-7-P-2-26-FD-M8-S	2x2xAWG26	7	140
2171706	IE-EC-5-M8-S-10-P-2-26-FD-M8-S	2x2xAWG26	10	200
2171707	IE-EC-5-M8-S-15-P-2-26-FD-M8-S	2x2xAWG26	15	300
2171708	IE-EC-5-M8-S-20-P-2-26-FD-M8-S	2x2xAWG26	20	400
angled plug M8 on straight plug M8				
2171718	IE-EC-5-M8-A-0,5-P-2-26-FD-M8-S	2x2xAWG26	0,5	10
2171719	IE-EC-5-M8-A-1-P-2-26-FD-M8-S	2x2xAWG26	1	20
2171720	IE-EC-5-M8-A-2-P-2-26-FD-M8-S	2x2xAWG26	2	40
2171721	IE-EC-5-M8-A-3-P-2-26-FD-M8-S	2x2xAWG26	3	60
2171722	IE-EC-5-M8-A-5-P-2-26-FD-M8-S	2x2xAWG26	5	100
2171723	IE-EC-5-M8-A-7-P-2-26-FD-M8-S	2x2xAWG26	7	140
2171724	IE-EC-5-M8-A-10-P-2-26-FD-M8-S	2x2xAWG26	10	200
2171725	IE-EC-5-M8-A-15-P-2-26-FD-M8-S	2x2xAWG26	15	300
2171726	IE-EC-5-M8-A-20-P-2-26-FD-M8-S	2x2xAWG26	20	400
straight connector on free conductor end				
2171709	IE-EC-5-M8-S-0,5-P-2-26-FD-OE	2x2xAWG26	0,5	10
2171710	IE-EC-5-M8-S-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171711	IE-EC-5-M8-S-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171712	IE-EC-5-M8-S-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171713	IE-EC-5-M8-S-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171714	IE-EC-5-M8-S-7-P-2-26-FD-OE	2x2xAWG26	7	140
2171715	IE-EC-5-M8-S-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171716	IE-EC-5-M8-S-15-P-2-26-FD-OE	2x2xAWG26	15	300
2171717	IE-EC-5-M8-S-20-P-2-26-FD-OE	2x2xAWG26	20	400
Angled connector on free conductor end				
2171727	IE-EC-5-M8-A-0,5-P-2-26-FD-OE	2x2xAWG26	0,5	10
2171728	IE-EC-5-M8-A-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171729	IE-EC-5-M8-A-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171730	IE-EC-5-M8-A-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171731	IE-EC-5-M8-A-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171732	IE-EC-5-M8-A-7-P-2-26-FD-OE	2x2xAWG26	7	140
2171733	IE-EC-5-M8-A-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171734	IE-EC-5-M8-A-15-P-2-26-FD-OE	2x2xAWG26	15	300
2171735	IE-EC-5-M8-A-20-P-2-26-FD-OE	2x2xAWG26	20	400

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

**ETHERLINE® EC FD Cat.5e M8-RJ45**

Industrial Ethernet Patchcord M8/RJ45

**Info**

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M8 connector and RJ45 connector

Technical data**Minimum bending radius**

Flexing: 8 x outer diameter
Fixed installation: 4 x outer diameter

**Protection rating**

IP 67

**Characteristic impedance**

100 Ohm +/- 15%

**Temperature range**

During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
ETHERLINE® EC FD Cat.5e M8-RJ45				
2171757	IE-EC-5-M8-S-0,5-P-2-26-FD-RJ45	2x2xAWG26	0.5	10
2171758	IE-EC-5-M8-S-1-P-2-26-FD-RJ45	2x2xAWG26	1	20
2171759	IE-EC-5-M8-S-2-P-2-26-FD-RJ45	2x2xAWG26	2	40
2171760	IE-EC-5-M8-S-3-P-2-26-FD-RJ45	2x2xAWG26	3	60
2171761	IE-EC-5-M8-S-5-P-2-26-FD-RJ45	2x2xAWG26	5	100
2171762	IE-EC-5-M8-S-10-P-2-26-FD-RJ45	2x2xAWG26	10	200
2171763	IE-EC-5-M8-S-20-P-2-26-FD-RJ45	2x2xAWG26	20	400

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® EC FD Cat.5e M12



Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius
Flexing: 8 x outer diameter
Fixed installation: 4 x outer diameter



Protection rating
M12 - IP 67 / IP 69



Characteristic impedance
100 Ohm +/- 15%



Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug M12				
2171778	IE-EC-5-M12D-S-0,5-P-2-26-FD-M12D-S	2x2xAWG26	0.5	10
2171779	IE-EC-5-M12D-S-1-P-2-26-FD-M12D-S	2x2xAWG26	1	20
2171780	IE-EC-5-M12D-S-2-P-2-26-FD-M12D-S	2x2xAWG26	2	40
2171781	IE-EC-5-M12D-S-3-P-2-26-FD-M12D-S	2x2xAWG26	3	60
2171782	IE-EC-5-M12D-S-5-P-2-26-FD-M12D-S	2x2xAWG26	5	100
2171783	IE-EC-5-M12D-S-10-P-2-26-FD-M12D-S	2x2xAWG26	10	200
2171784	IE-EC-5-M12D-S-20-P-2-26-FD-M12D-S	2x2xAWG26	20	400
angled plug M12 on straight plug M12				
2171785	IE-EC-5-M12D-A-0,5-P-2-26-FD-M12D-S	2x2xAWG26	0.5	10
2171786	IE-EC-5-M12D-A-1-P-2-26-FD-M12D-S	2x2xAWG26	1	20
2171787	IE-EC-5-M12D-A-2-P-2-26-FD-M12D-S	2x2xAWG26	2	40
2171788	IE-EC-5-M12D-A-3-P-2-26-FD-M12D-S	2x2xAWG26	3	60
2171789	IE-EC-5-M12D-A-5-P-2-26-FD-M12D-S	2x2xAWG26	5	100
2171790	IE-EC-5-M12D-A-10-P-2-26-FD-M12D-S	2x2xAWG26	2	200
2171791	IE-EC-5-M12D-A-20-P-2-26-FD-M12D-S	2x2xAWG26	20	400
straight plug M12 on free conductor end				
2171792	IE-EC-5-M12D-S-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171793	IE-EC-5-M12D-S-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171794	IE-EC-5-M12D-S-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171795	IE-EC-5-M12D-S-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171796	IE-EC-5-M12D-S-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171797	IE-EC-5-M12D-S-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171798	IE-EC-5-M12D-S-20-P-2-26-FD-OE	2x2xAWG26	20	400
angled plug M12 on free conductor end				
2171870	IE-EC-5-M12D-A-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171871	IE-EC-5-M12D-A-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171872	IE-EC-5-M12D-A-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171873	IE-EC-5-M12D-A-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171874	IE-EC-5-M12D-A-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171875	IE-EC-5-M12D-A-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171876	IE-EC-5-M12D-A-20-P-2-26-FD-OE	2x2xAWG26	20	400
angled plug M12 on angled plug M12				
2171906	IE-EC-5-M12D-A-0,5-P-2-26-FD-M12D-A	2x2xAWG26	0.5	10
2171907	IE-EC-5-M12D-A-1-P-2-26-FD-M12D-A	2x2xAWG26	1	20
2171908	IE-EC-5-M12D-A-2-P-2-26-FD-M12D-A	2x2xAWG26	2	40
2171909	IE-EC-5-M12D-A-3-P-2-26-FD-M12D-A	2x2xAWG26	3	60
2171910	IE-EC-5-M12D-A-5-P-2-26-FD-M12D-A	2x2xAWG26	5	100
2171911	IE-EC-5-M12D-A-10-P-2-26-FD-M12D-A	2x2xAWG26	10	200
2171913	IE-EC-5-M12D-A-20-P-2-26-FD-M12D-A	2x2xAWG26	20	400

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® EC FD Cat.5e M12-RJ45

Industrial Ethernet EC Patchcord M12/RJ45



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology






Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 connector, D-coded and RJ45-connector
- 4 pole M12 connector with vibration protection

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 8 x outer diameter Fixed installation: 4 x outer diameter
	Protection rating M12 - IP 67 / IP 69 RJ45 - IP 20
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range During installation: -30°C to +50°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug RJ45				
2171750	IE-EC-5-M12D-S-0,5-P-2-26-FD-RJ45	2x2xAWG26	0.5	10
2171751	IE-EC-5-M12D-S-1-P-2-26-FD-RJ45	2x2xAWG26	1	20
2171752	IE-EC-5-M12D-S-2-P-2-26-FD-RJ45	2x2xAWG26	2	40
2171753	IE-EC-5-M12D-S-3-P-2-26-FD-RJ45	2x2xAWG26	3	60
2171754	IE-EC-5-M12D-S-5-P-2-26-FD-RJ45	2x2xAWG26	5	100
2171755	IE-EC-5-M12D-S-10-P-2-26-FD-RJ45	2x2xAWG26	10	200
2171756	IE-EC-5-M12D-S-20-P-2-26-FD-RJ45	2x2xAWG26	20	400

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® EC FD Cat.5e RJ45

Industrial Ethernet EC Patchcord RJ45



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with RJ45 connectors

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius
Flexing: 8 x outer diameter
Fixed installation: 4 x outer diameter



Protection rating
RJ45 - IP 20



Characteristic impedance
100 Ohm +/- 15%



Temperature range
During installation: -30°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug RJ45 on straight plug RJ45				
2171764	IE-EC-5-RJ45-0,5-P-2-26-FD-RJ45	2x2xAWG26	0.5	10
2171765	IE-EC-5-RJ45-1-P-2-26-FD-RJ45	2x2xAWG26	1	20
2171766	IE-EC-5-RJ45-2-P-2-26-FD-RJ45	2x2xAWG26	2	40
2171767	IE-EC-5-RJ45-3-P-2-26-FD-RJ45	2x2xAWG26	3	60
2171768	IE-EC-5-RJ45-5-P-2-26-FD-RJ45	2x2xAWG26	5	100
2171769	IE-EC-5-RJ45-10-P-2-26-FD-RJ45	2x2xAWG26	10	200
2171770	IE-EC-5-RJ45-20-P-2-26-FD-RJ45	2x2xAWG26	20	400
straight plug RJ45 on free conductor end				
2171771	IE-EC-5-RJ45-0,5-P-2-26-FD-OE	2x2xAWG26	0.5	10
2171772	IE-EC-5-RJ45-1-P-2-26-FD-OE	2x2xAWG26	1	20
2171773	IE-EC-5-RJ45-2-P-2-26-FD-OE	2x2xAWG26	2	40
2171774	IE-EC-5-RJ45-3-P-2-26-FD-OE	2x2xAWG26	3	60
2171775	IE-EC-5-RJ45-5-P-2-26-FD-OE	2x2xAWG26	5	100
2171776	IE-EC-5-RJ45-10-P-2-26-FD-OE	2x2xAWG26	10	200
2171777	IE-EC-5-RJ45-20-P-2-26-FD-OE	2x2xAWG26	20	400

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® EC FD Cat.5e M12F



Info

- Industrial Ethernet cable
- Suitable for drag chains
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use
- For highly flexible applications
- Automation technology

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Product Make-up

- AWG 26 (19-wire)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 socket, D-coded
- 4 pole M12 connector with vibration protection

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 8 x outer diameter Fixed installation: 4 x outer diameter
	Protection rating M12 – IP 67 / IP 69
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range During installation: -30°C to +50°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/ 1.000 pieces)
straight socket M12 on straight plug M12				
2171736	IE-EC-5-M12DF-S-0,5-P-2-26-FD-M12D-S	2x2xAWG26	0,5	10
2171737	IE-EC-5-M12DF-S-1-P-2-26-FD-M12D-S	2x2xAWG26	1	20
2171738	IE-EC-5-M12DF-S-2-P-2-26-FD-M12D-S	2x2xAWG26	2	40
2171739	IE-EC-5-M12DF-S-3-P-2-26-FD-M12D-S	2x2xAWG26	3	60
2171740	IE-EC-5-M12DF-S-5-P-2-26-FD-M12D-S	2x2xAWG26	5	100
2171741	IE-EC-5-M12DF-S-10-P-2-26-FD-M12D-S	2x2xAWG26	10	200
2171742	IE-EC-5-M12DF-S-20-P-2-26-FD-M12D-S	2x2xAWG26	20	400
straight socket M12 on angled plug M12				
2171743	IE-EC-5-M12DF-S-0,5-P-2-26-FD-M12D-A	2x2xAWG26	0,5	10
2171744	IE-EC-5-M12DF-S-1-P-2-26-FD-M12D-A	2x2xAWG26	1	20
2171745	IE-EC-5-M12DF-S-2-P-2-26-FD-M12D-A	2x2xAWG26	2	40
2171746	IE-EC-5-M12DF-S-3-P-2-26-FD-M12D-A	2x2xAWG26	3	60
2171747	IE-EC-5-M12DF-S-5-P-2-26-FD-M12D-A	2x2xAWG26	5	100
2171748	IE-EC-5-M12DF-S-10-P-2-26-FD-M12D-A	2x2xAWG26	10	200
2171749	IE-EC-5-M12DF-S-20-P-2-26-FD-M12D-A	2x2xAWG26	20	400
straight socket M12 on straight socket M12				
2171915	IE-EC-5-M12DF-S-0,5-P-2-26-FD-M12DF-S	2x2xAWG26	0,5	10
2171916	IE-EC-5-M12DF-S-1-P-2-26-FD-M12DF-S	2x2xAWG26	1	20
2171917	IE-EC-5-M12DF-S-2-P-2-26-FD-M12DF-S	2x2xAWG26	2	40
2171918	IE-EC-5-M12DF-S-3-P-2-26-FD-M12DF-S	2x2xAWG26	3	60
2171919	IE-EC-5-M12DF-S-5-P-2-26-FD-M12DF-S	2x2xAWG26	5	100
2171920	IE-EC-5-M12DF-S-10-P-2-26-FD-M12DF-S	2x2xAWG26	10	200
2171921	IE-EC-5-M12DF-S-20-P-2-26-FD-M12DF-S	2x2xAWG26	20	400

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/ 100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® PN Cat.5 M12

PROFINET Patchcord M12



Info

- For PROFINET applications (D-coded)
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type A
- Fixed installation
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)
- UL File Number: E249137

Product Make-up

- Solid and bare copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius

During installation: 15 x outer diameter
Fixed installation: 10 x outer diameter



Protection rating

IP 67 / IP 69



Characteristic impedance

100 Ohm +/- 15%



Temperature range

During installation: -20°C to +60°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug M12				
2171001	IE-PNA-5-M12D-S-1-Y-2-22-1-M12D-S	2x2xAWG22	1	30,4
2171002	IE-PNA-5-M12D-S-2-Y-2-22-1-M12D-S	2x2xAWG22	2	60,8
2171003	IE-PNA-5-M12D-S-3-Y-2-22-1-M12D-S	2x2xAWG22	3	91,2
2171004	IE-PNA-5-M12D-S-5-Y-2-22-1-M12D-S	2x2xAWG22	5	152
2171005	IE-PNA-5-M12D-S-10-Y-2-22-1-M12D-S	2x2xAWG22	10	304
2171006	IE-PNA-5-M12D-S-20-Y-2-22-1-M12D-S	2x2xAWG22	20	608
angled plug M12 on straight plug M12				
2171013	IE-PNA-5-M12D-A-1-Y-2-22-1-M12D-S	2x2xAWG22	1	30,4
2171014	IE-PNA-5-M12D-A-2-Y-2-22-1-M12D-S	2x2xAWG22	2	60,8
2171015	IE-PNA-5-M12D-A-3-Y-2-22-1-M12D-S	2x2xAWG22	3	91,2
2171016	IE-PNA-5-M12D-A-5-Y-2-22-1-M12D-S	2x2xAWG22	5	152
2171017	IE-PNA-5-M12D-A-10-Y-2-22-1-M12D-S	2x2xAWG22	10	304
2171018	IE-PNA-5-M12D-A-20-Y-2-22-1-M12D-S	2x2xAWG22	20	608
straight plug M12 on free conductor end				
2171007	IE-PNA-5-M12D-S-1-Y-2-22-1-OE	2x2xAWG22	1	30,4
2171008	IE-PNA-5-M12D-S-2-Y-2-22-1-OE	2x2xAWG22	2	60,8
2171009	IE-PNA-5-M12D-S-3-Y-2-22-1-OE	2x2xAWG22	3	91,2
2171010	IE-PNA-5-M12D-S-5-Y-2-22-1-OE	2x2xAWG22	5	152
2171011	IE-PNA-5-M12D-S-10-Y-2-22-1-OE	2x2xAWG22	10	304
2171012	IE-PNA-5-M12D-S-20-Y-2-22-1-OE	2x2xAWG22	20	608
angled plug M12 on free conductor end				
2171019	IE-PNA-5-M12D-A-1-Y-2-22-1-OE	2x2xAWG22	1	30,4
2171020	IE-PNA-5-M12D-A-2-Y-2-22-1-OE	2x2xAWG22	2	60,8
2171021	IE-PNA-5-M12D-A-3-Y-2-22-1-OE	2x2xAWG22	3	91,2
2171022	IE-PNA-5-M12D-A-5-Y-2-22-1-OE	2x2xAWG22	5	152
2171023	IE-PNA-5-M12D-A-10-Y-2-22-1-OE	2x2xAWG22	10	304
2171024	IE-PNA-5-M12D-A-20-Y-2-22-1-OE	2x2xAWG22	20	608

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet

**ETHERLINE® PN Cat.5 M12-RJ45**

PROFINET Patchcord M12/RJ45

**Info**

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type A
- Fixed installation
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Solid and bare copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 connector, D-coded and RJ45-connector
- 4 pole M12 connector with vibration protection

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius During installation: 15 x outer diameter Fixed installation: 10 x outer diameter
	Protection rating M12 - IP 67 / IP 69 RJ45 - IP 20
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range During installation: -20°C to +60°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/ 1.000 pieces)
straight plug M12 on straight plug RJ45				
2171164	IE-PNA-5-M12D-S-0,5-Y-2-22-1-RJ45	2x2xAWG22	0,5	15.2
2171165	IE-PNA-5-M12D-S-1-Y-2-22-1-RJ45	2x2xAWG22	1	30.4
2171166	IE-PNA-5-M12D-S-2-Y-2-22-1-RJ45	2x2xAWG22	2	60.8
2171167	IE-PNA-5-M12D-S-3-Y-2-22-1-RJ45	2x2xAWG22	3	91.2
2171168	IE-PNA-5-M12D-S-5-Y-2-22-1-RJ45	2x2xAWG22	5	152
2171169	IE-PNA-5-M12D-S-10-Y-2-22-1-RJ45	2x2xAWG22	10	304
2171170	IE-PNA-5-M12D-S-20-Y-2-22-1-RJ45	2x2xAWG22	20	608
angled plug M12 on straight plug RJ45				
2171171	IE-PNA-5-M12D-A-0,5-Y-2-22-1-RJ45	2x2xAWG22	0,5	15.2
2171172	IE-PNA-5-M12D-A-1-Y-2-22-1-RJ45	2x2xAWG22	1	30.4
2171173	IE-PNA-5-M12D-A-2-Y-2-22-1-RJ45	2x2xAWG22	2	60.8
2171174	IE-PNA-5-M12D-A-3-Y-2-22-1-RJ45	2x2xAWG22	3	91.2
2171175	IE-PNA-5-M12D-A-5-Y-2-22-1-RJ45	2x2xAWG22	5	152
2171176	IE-PNA-5-M12D-A-10-Y-2-22-1-RJ45	2x2xAWG22	10	304
2171177	IE-PNA-5-M12D-A-20-Y-2-22-1-RJ45	2x2xAWG22	20	608

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet

**ETHERLINE® PN Cat.5 RJ45**

PROFINET Patchcord RJ45

**Benefits**

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type A
- Fixed installation
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Solid and bare copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with RJ45 connectors

**Info**

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Technical data

ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry

**Minimum bending radius**

During installation: 15 x outer diameter
Fixed installation: 10 x outer diameter

**Protection rating**

M12 - IP 67 / IP 69
RJ45 - IP 20

**Characteristic impedance**

100 Ohm +/- 15%

**Temperature range**

During installation: -20°C to +60°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug RJ45 on straight plug RJ45				
2171178	IE-PNA-5-RJ45-0,5-Y-2-22-1-RJ45	2x2xAWG22	0,5	15,2
2171179	IE-PNA-5-RJ45-1-Y-2-22-1-RJ45	2x2xAWG22	1	30,4
2171180	IE-PNA-5-RJ45-2-Y-2-22-1-RJ45	2x2xAWG22	2	60,8
2171181	IE-PNA-5-RJ45-3-Y-2-22-1-RJ45	2x2xAWG22	3	91,2
2171182	IE-PNA-5-RJ45-5-Y-2-22-1-RJ45	2x2xAWG22	5	152
2171183	IE-PNA-5-RJ45-10-Y-2-22-1-RJ45	2x2xAWG22	10	304
2171184	IE-PNA-5-RJ45-20-Y-2-22-1-RJ45	2x2xAWG22	20	608
straight plug RJ45 on free conductor end				
2171185	IE-PNA-5-RJ45-0,5-Y-2-22-1-OE	2x2xAWG22	0,5	15,2
2171186	IE-PNA-5-RJ45-1-Y-2-22-1-OE	2x2xAWG22	1	30,4
2171187	IE-PNA-5-RJ45-2-Y-2-22-1-OE	2x2xAWG22	2	60,8
2171188	IE-PNA-5-RJ45-3-Y-2-22-1-OE	2x2xAWG22	3	91,2
2171189	IE-PNA-5-RJ45-5-Y-2-22-1-OE	2x2xAWG22	5	152
2171190	IE-PNA-5-RJ45-10-Y-2-22-1-OE	2x2xAWG22	10	304
2171191	IE-PNA-5-RJ45-20-Y-2-22-1-OE	2x2xAWG22	20	608

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet



ETHERLINE® PN Flex Cat.5 M12

PROFINET Patchcord M12

Info

- For PROFINET applications (D-coded)
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type B
- Flexible use
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)
- UL File Number: E249137

Product Make-up

- Flexible fine-wire copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 15 x outer diameter Fixed installation: 10 x outer diameter
	Protection rating IP 67 / IP 69
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Flexing: -20°C to +60°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug M12				
2171025	IE-PNB-5-M12D-S-1-Y-2-22-7-M12D-S	2x2xAWG22	1	31,3
2171026	IE-PNB-5-M12D-S-2-Y-2-22-7-M12D-S	2x2xAWG22	2	62,6
2171027	IE-PNB-5-M12D-S-3-Y-2-22-7-M12D-S	2x2xAWG22	3	93,9
2171028	IE-PNB-5-M12D-S-5-Y-2-22-7-M12D-S	2x2xAWG22	5	156,5
2171029	IE-PNB-5-M12D-S-10-Y-2-22-7-M12D-S	2x2xAWG22	10	313
2171030	IE-PNB-5-M12D-S-20-Y-2-22-7-M12D-S	2x2xAWG22	20	626
angled plug M12 on straight plug M12				
2171037	IE-PNB-5-M12D-A-1-Y-2-22-7-M12D-S	2x2xAWG22	1	31,3
2171038	IE-PNB-5-M12D-A-2-Y-2-22-7-M12D-S	2x2xAWG22	2	62,6
2171039	IE-PNB-5-M12D-A-3-Y-2-22-7-M12D-S	2x2xAWG22	3	93,9
2171040	IE-PNB-5-M12D-A-5-Y-2-22-7-M12D-S	2x2xAWG22	5	156,5
2171041	IE-PNB-5-M12D-A-10-Y-2-22-7-M12D-S	2x2xAWG22	10	313
2171042	IE-PNB-5-M12D-A-20-Y-2-22-7-M12D-S	2x2xAWG22	20	626
straight plug M12 on free conductor end				
2171031	IE-PNB-5-M12D-S-1-Y-2-22-7-OE	2x2xAWG22	1	31,3
2171032	IE-PNB-5-M12D-S-2-Y-2-22-7-OE	2x2xAWG22	2	62,6
2171033	IE-PNB-5-M12D-S-3-Y-2-22-7-OE	2x2xAWG22	3	93,9
2171034	IE-PNB-5-M12D-S-5-Y-2-22-7-OE	2x2xAWG22	5	156,5
2171035	IE-PNB-5-M12D-S-10-Y-2-22-7-OE	2x2xAWG22	10	313
2171036	IE-PNB-5-M12D-S-20-Y-2-22-7-OE	2x2xAWG22	20	626
angled plug M12 on free conductor end				
2171043	IE-PNB-5-M12D-A-1-Y-2-22-7-OE	2x2xAWG22	1	31,3
2171044	IE-PNB-5-M12D-A-2-Y-2-22-7-OE	2x2xAWG22	2	62,6
2171045	IE-PNB-5-M12D-A-3-Y-2-22-7-OE	2x2xAWG22	3	93,9
2171046	IE-PNB-5-M12D-A-5-Y-2-22-7-OE	2x2xAWG22	5	156,5
2171047	IE-PNB-5-M12D-A-10-Y-2-22-7-OE	2x2xAWG22	10	313
2171048	IE-PNB-5-M12D-A-20-Y-2-22-7-OE	2x2xAWG22	20	626

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® PN Flex Cat.5 M12-RJ45

PROFINET Patchcord M12/RJ45



Info

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type B
- Flexible use
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Flexible fine-wire copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 connector, D-coded and RJ45-connector
- 4 pole M12 connector with vibration protection

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius

Flexing: 15 x outer diameter
Fixed installation: 10 x outer diameter



Protection rating

M12 - IP 67 / IP 69
RJ45 - IP 20



Characteristic impedance

100 Ohm +/- 15%



Temperature range

Flexing: -20°C to +60°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug M12 on straight plug RJ45				
2171214	IE-PNB-5-M12D-S-0,5-Y-2-22-7-RJ45	2x2xAWG22	0.5	15.65
2171215	IE-PNB-5-M12D-S-1-Y-2-22-7-RJ45	2x2xAWG22	1	31.3
2171216	IE-PNB-5-M12D-S-2-Y-2-22-7-RJ45	2x2xAWG22	2	62.6
2171217	IE-PNB-5-M12D-S-3-Y-2-22-7-RJ45	2x2xAWG22	3	93.9
2171218	IE-PNB-5-M12D-S-5-Y-2-22-7-RJ45	2x2xAWG22	5	156.5
2171219	IE-PNB-5-M12D-S-10-Y-2-22-7-RJ45	2x2xAWG22	10	313
2171220	IE-PNB-5-M12D-S-20-Y-2-22-7-RJ45	2x2xAWG22	20	626
angled plug M12 on straight plug RJ45				
2171221	IE-PNB-5-M12D-A-0,5-Y-2-22-7-RJ45	2x2xAWG22	0.5	15.65
2171222	IE-PNB-5-M12D-A-1-Y-2-22-7-RJ45	2x2xAWG22	1	31.3
2171223	IE-PNB-5-M12D-A-2-Y-2-22-7-RJ45	2x2xAWG22	2	62.6
2171224	IE-PNB-5-M12D-A-3-Y-2-22-7-RJ45	2x2xAWG22	3	93.9
2171225	IE-PNB-5-M12D-A-5-Y-2-22-7-RJ45	2x2xAWG22	5	156.5
2171226	IE-PNB-5-M12D-A-10-Y-2-22-7-RJ45	2x2xAWG22	10	313
2171227	IE-PNB-5-M12D-A-20-Y-2-22-7-RJ45	2x2xAWG22	20	626

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

**ETHERLINE® PN Flex Cat.5 RJ45**
PROFINET Patchcord RJ45**Info**

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type B
- Flexible use
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Flexible fine-wire copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PVC
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with RJ45 connectors

Technical data

ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry

**Minimum bending radius**

During installation: 15 x outer diameter
Fixed installation: 10 x outer diameter

**Protection rating**

RJ45 - IP 20

**Characteristic impedance**

100 Ohm ± 15%

**Temperature range**

During installation: -20°C to +60°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug RJ45 on straight plug RJ45				
2171228	IE-PNB-5-RJ45-0,5-Y-2-22-7-RJ45	2x2xAWG22	0,5	15.65
2171229	IE-PNB-5-RJ45-1-Y-2-22-7-RJ45	2x2xAWG22	1	31.3
2171230	IE-PNB-5-RJ45-2-Y-2-22-7-RJ45	2x2xAWG22	2	62.6
2171231	IE-PNB-5-RJ45-3-Y-2-22-7-RJ45	2x2xAWG22	3	93.9
2171232	IE-PNB-5-RJ45-5-Y-2-22-7-RJ45	2x2xAWG22	5	156.5
2171233	IE-PNB-5-RJ45-10-Y-2-22-7-RJ45	2x2xAWG22	10	313
2171234	IE-PNB-5-RJ45-20-Y-2-22-7-RJ45	2x2xAWG22	20	626
straight plug RJ45 on free conductor end				
2171235	IE-PNB-5-RJ45-0,5-Y-2-22-7-OE	2x2xAWG22	0,5	15.65
2171236	IE-PNB-5-RJ45-1-Y-2-22-7-OE	2x2xAWG22	1	31.3
2171237	IE-PNB-5-RJ45-2-Y-2-22-7-OE	2x2xAWG22	2	62.6
2171238	IE-PNB-5-RJ45-3-Y-2-22-7-OE	2x2xAWG22	3	93.9
2171239	IE-PNB-5-RJ45-5-Y-2-22-7-OE	2x2xAWG22	5	156.5
2171240	IE-PNB-5-RJ45-10-Y-2-22-7-OE	2x2xAWG22	10	313
2171241	IE-PNB-5-RJ45-20-Y-2-22-7-OE	2x2xAWG22	20	626

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet



ETHERLINE® PN FD Cat.5 M12

PROFINET Patchcord M12



Info

- For PROFINET applications (D-coded)
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- For directly connecting two electric components
- Non-permanent connections allow for easy change of equipment
- CAT.5-Performance

Application range

- For PROFINET applications type C
- Highly flexible application
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMX)
- UL File Number: E249137

Product Make-up

- Extra-fine wire, tinned braided conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 D-coded connectors
- 4 pole M12 connector with vibration protection

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius
Flexing: 8 x outer diameter



Protection rating
IP 67 / IP 69



Characteristic impedance
100 Ohm +/- 15%



Temperature range
Flexing: -20°C to +60°C
Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg / 1.000 pieces)
straight plug M12 on straight plug M12				
2171049	IE-PNC-5-M12D-S-1-P-2-22-FD-M12D-S	2x2xAWG22	1	31,3
2171050	IE-PNC-5-M12D-S-2-P-2-22-FD-M12D-S	2x2xAWG22	2	62,6
2171051	IE-PNC-5-M12D-S-3-P-2-22-FD-M12D-S	2x2xAWG22	3	93,9
2171052	IE-PNC-5-M12D-S-5-P-2-22-FD-M12D-S	2x2xAWG22	5	156,5
2171053	IE-PNC-5-M12D-S-10-P-2-22-FD-M12D-S	2x2xAWG22	10	313
2171054	IE-PNC-5-M12D-S-20-P-2-22-FD-M12D-S	2x2xAWG22	20	626
angled plug M12 on straight plug M12				
2171061	IE-PNC-5-M12D-A-1-P-2-22-FD-M12D-S	2x2xAWG22	1	31,3
2171062	IE-PNC-5-M12D-A-2-P-2-22-FD-M12D-S	2x2xAWG22	2	62,6
2171063	IE-PNC-5-M12D-A-3-P-2-22-FD-M12D-S	2x2xAWG22	3	93,9
2171064	IE-PNC-5-M12D-A-5-P-2-22-FD-M12D-S	2x2xAWG22	5	156,5
2171065	IE-PNC-5-M12D-A-10-P-2-22-FD-M12D-S	2x2xAWG22	10	313
2171066	IE-PNC-5-M12D-A-20-P-2-22-FD-M12D-S	2x2xAWG22	20	626
straight plug M12 on free conductor end				
2171055	IE-PNC-5-M12D-S-1-P-2-22-FD-OE	2x2xAWG22	1	31,3
2171056	IE-PNC-5-M12D-S-2-P-2-22-FD-OE	2x2xAWG22	2	62,6
2171057	IE-PNC-5-M12D-S-3-P-2-22-FD-OE	2x2xAWG22	3	93,9
2171058	IE-PNC-5-M12D-S-5-P-2-22-FD-OE	2x2xAWG22	5	156,5
2171059	IE-PNC-5-M12D-S-10-P-2-22-FD-OE	2x2xAWG22	10	313
2171060	IE-PNC-5-M12D-S-20-P-2-22-FD-OE	2x2xAWG22	20	626
angled plug M12 on free conductor end				
2171067	IE-PNC-5-M12D-A-1-P-2-22-FD-OE	2x2xAWG22	1	31,3
2171068	IE-PNC-5-M12D-A-2-P-2-22-FD-OE	2x2xAWG22	2	62,6
2171069	IE-PNC-5-M12D-A-3-P-2-22-FD-OE	2x2xAWG22	3	93,9
2171070	IE-PNC-5-M12D-A-5-P-2-22-FD-OE	2x2xAWG22	5	156,5
2171071	IE-PNC-5-M12D-A-10-P-2-22-FD-OE	2x2xAWG22	10	313
2171072	IE-PNC-5-M12D-A-20-P-2-22-FD-OE	2x2xAWG22	20	626

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

**ETHERLINE® PN FD Cat.5 M12-RJ45**

PROFINET Patchcord M12/RJ45

**Info**

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type C
- Highly flexible application
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Flexible fine-wire copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcords with M12 connector, D-coded and RJ45-connector
- 4 pole M12 connector with vibration protection

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 8 x outer diameter
	Protection rating M12 - IP 67 / IP 69 RJ45 - IP 20
	Characteristic impedance 100 Ohm ± 15%
	Temperature range Flexing: -20°C to +60°C Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
angled plug M12 on straight plug RJ45				
2171271	IE-PNC-5-M12D-A-0,5-P-2-22-FD-RJ45	2x2xAWG22	0.5	15.65
2171272	IE-PNC-5-M12D-A-1-P-2-22-FD-RJ45	2x2xAWG22	1	31.3
2171276	IE-PNC-5-M12D-A-10-P-2-22-FD-RJ45	2x2xAWG22	10	313
2171273	IE-PNC-5-M12D-A-2-P-2-22-FD-RJ45	2x2xAWG22	2	62.6
2171277	IE-PNC-5-M12D-A-20-P-2-22-FD-RJ45	2x2xAWG22	20	626
2171274	IE-PNC-5-M12D-A-3-P-2-22-FD-RJ45	2x2xAWG22	3	93.9
2171275	IE-PNC-5-M12D-A-5-P-2-22-FD-RJ45	2x2xAWG22	5	156.5
straight plug M12 on straight plug RJ45				
2171264	IE-PNC-5-M12D-S-0,5-P-2-22-FD-RJ45	2x2xAWG22	0.5	15.65
2171265	IE-PNC-5-M12D-S-1-P-2-22-FD-RJ45	2x2xAWG22	1	31.3
2171269	IE-PNC-5-M12D-S-10-P-2-22-FD-RJ45	2x2xAWG22	10	313
2171266	IE-PNC-5-M12D-S-2-P-2-22-FD-RJ45	2x2xAWG22	2	62.6
2171270	IE-PNC-5-M12D-S-20-P-2-22-FD-RJ45	2x2xAWG22	20	626
2171267	IE-PNC-5-M12D-S-3-P-2-22-FD-RJ45	2x2xAWG22	3	93.9
2171268	IE-PNC-5-M12D-S-5-P-2-22-FD-RJ45	2x2xAWG22	5	156.5

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.



ETHERLINE® PN FD Cat.5 RJ45

PROFINET Patchcord RJ45



Info

- For PROFINET applications
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.5-Performance

Application range

- For PROFINET applications type C
- Highly flexible application
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.5e, ISO/IEC 11801 and EN 50173, Class D
- 2pair: 10/100 Mbit/s for Industrial Ethernet

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Flexible fine-wire copper conductor
- Star quad
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with RJ45 connectors

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius
Flexing: 8 x outer diameter



Protection rating
RJ45 - IP 20



Characteristic impedance
100 Ohm +/- 15%



Temperature range
During installation: -20°C to +60°C
Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
straight plug RJ45 on straight plug RJ45				
2171278	IE-PNC-5-RJ45-0,5-P-2-22-FD-RJ45	2x2xAWG22	0.5	15.65
2171279	IE-PNC-5-RJ45-1-P-2-22-FD-RJ45	2x2xAWG22	1	31.3
2171280	IE-PNC-5-RJ45-2-P-2-22-FD-RJ45	2x2xAWG22	2	62.6
2171281	IE-PNC-5-RJ45-3-P-2-22-FD-RJ45	2x2xAWG22	3	93.9
2171282	IE-PNC-5-RJ45-5-P-2-22-FD-RJ45	2x2xAWG22	5	156.5
2171283	IE-PNC-5-RJ45-10-P-2-22-FD-RJ45	2x2xAWG22	10	313
2171284	IE-PNC-5-RJ45-20-P-2-22-FD-RJ45	2x2xAWG22	20	626
straight plug RJ45 on free conductor end				
2171285	IE-PNC-5-RJ45-0,5-P-2-22-FD-OE	2x2xAWG22	0.5	15.65
2171286	IE-PNC-5-RJ45-1-P-2-22-FD-OE	2x2xAWG22	1	31.3
2171287	IE-PNC-5-RJ45-2-P-2-22-FD-OE	2x2xAWG22	2	62.6
2171288	IE-PNC-5-RJ45-3-P-2-22-FD-OE	2x2xAWG22	3	93.9
2171289	IE-PNC-5-RJ45-5-P-2-22-FD-OE	2x2xAWG22	5	156.5
2171290	IE-PNC-5-RJ45-10-P-2-22-FD-OE	2x2xAWG22	10	313
2171291	IE-PNC-5-RJ45-20-P-2-22-FD-OE	2x2xAWG22	20	626

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

For detailed technical information please refer to the data sheet

ETHERLINE® FD CAT.6_A M12

Info

- CAT.6_A for drag chain, qualified for 10Gbit/s
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.6_A qualified for 10Gbit/s

Application range

- For PROFINET applications type C
- Highly flexible application
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- CAT.6_A for drag chain, qualified for 10Gbit/s
- Min. 2.5 million bending cycles in the power chain
- Meets the requirements according to CAT.6_A ISO/IEC 11801 and EN 50173

Product Make-up

- 7-wire tinned stranded copper conductor
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with M12 X-coded connectors

Technical data

	ETIM 5.0 Class-ID: EC002599 ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry
	Minimum bending radius Flexing: 15 x outer diameter
	Protection rating IP 67
	Characteristic impedance 100 Ohm +- 15%
	Temperature range Flexing: -30°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
Straight connector on straight connector				
2172000	IE-6A-M12X-S-0,5-P-4-24-FD-M12X-S	4x2xAWG24	0,5	22
2172001	IE-6A-M12X-S-1-P-4-24-FD-M12X-S	4x2xAWG24	1	44
2172002	IE-6A-M12X-S-2-P-4-24-FD-M12X-S	4x2xAWG24	2	88
2172003	IE-6A-M12X-S-3-P-4-24-FD-M12X-S	4x2xAWG24	3	132
2172004	IE-6A-M12X-S-5-P-4-24-FD-M12X-S	4x2xAWG24	5	220
2172005	IE-6A-M12X-S-10-P-4-24-FD-M12X-S	4x2xAWG24	10	440
2172006	IE-6A-M12X-S-20-P-4-24-FD-M12X-S	4x2xAWG24	20	880
straight connector on free conductor end				
2172007	IE-6A-M12X-S-0,5-P-4-24-FD-OE	4x2xAWG24	0,5	22
2172008	IE-6A-M12X-S-1-P-4-24-FD-OE	4x2xAWG24	1	44
2172009	IE-6A-M12X-S-2-P-4-24-FD-OE	4x2xAWG24	2	88
2172010	IE-6A-M12X-S-3-P-4-24-FD-OE	4x2xAWG24	3	132
2172011	IE-6A-M12X-S-5-P-4-24-FD-OE	4x2xAWG24	5	220
2172012	IE-6A-M12X-S-10-P-4-24-FD-OE	4x2xAWG24	10	440
2172013	IE-6A-M12X-S-20-P-4-24-FD-OE	4x2xAWG24	20	880
Straight connector to straight socket				
2172028	IE-6A-M12XF-S-0,5-P-4-24-FD-M12X-S	4x2xAWG24	0,5	22
2172029	IE-6A-M12XF-S-1-P-4-24-FD-M12X-S	4x2xAWG24	1	44
2172030	IE-6A-M12XF-S-2-P-4-24-FD-M12X-S	4x2xAWG24	2	88
2172031	IE-6A-M12XF-S-3-P-4-24-FD-M12X-S	4x2xAWG24	3	132
2172032	IE-6A-M12XF-S-5-P-4-24-FD-M12X-S	4x2xAWG24	5	220
2172033	IE-6A-M12XF-S-10-P-4-24-FD-M12X-S	4x2xAWG24	10	440
2172034	IE-6A-M12XF-S-20-P-4-24-FD-M12X-S	4x2xAWG24	20	880
socket on free conductor end				
2172170	IE-6A-M12XF-S-0,5-P-4-24-FD-OE	4x2xAWG24	0,5	22
2172171	IE-6A-M12XF-S-1-P-4-24-FD-OE	4x2xAWG24	1	44
2172172	IE-6A-M12XF-S-2-P-4-24-FD-OE	4x2xAWG24	2	88
2172173	IE-6A-M12XF-S-3-P-4-24-FD-OE	4x2xAWG24	3	132
2172174	IE-6A-M12XF-S-5-P-4-24-FD-OE	4x2xAWG24	5	220
2172175	IE-6A-M12XF-S-10-P-4-24-FD-OE	4x2xAWG24	10	440
2172176	IE-6A-M12XF-S-20-P-4-24-FD-OE	4x2xAWG24	20	880

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Other lengths and types of connectors are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466

ETHERLINE® TORSION Cat.6_A M12

Info

- Industrial Ethernet Cable, 4-pair, suitable for torsion stress
- CAT.6_A qualified for 10Gbit/s
- Other types are available on www.lappgroup.com/assemblyfinder or upon request

Benefits

- Non-permanent connections allow for easy change of equipment
- For directly connecting two electric components
- CAT.6_A qualified for 10Gbit/s

Application range

- For PROFINET applications type C
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)
- Suitable for EtherCAT and EtherNet/IP applications
- Suitable for use in industrial applications
- For indoor use

Product features

- Meets the requirements according to CAT.6_A, ISO/IEC 11801 and EN 50173
- Industrial Ethernet Cable, 4-pair, suitable for torsion stress

Product Make-up

- 7-wire tinned stranded copper conductor
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath made of PUR
- Colour: green (based on RAL 6018)
- Pre-assembled patchcord with M12 X-coded connectors

Technical data



ETIM 5.0 Class-ID: EC002599
ETIM 5.0 Class-Description: Patch cord copper (twisted pair) industry



Minimum bending radius
Flexing: 15 x outer diameter



Protection rating
IP 67



Characteristic impedance
100 Ohm +/- 15%



Temperature range
Flexing: -30°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and AWG per conductor	Length (m)	Copper index (kg/1.000 pieces)
Straight connector on straight connector				
2172100	IE-6A-M12X-S-0,5-P-4-24-T-M12X-S	4x2xAWG24	0.5	22
2172101	IE-6A-M12X-S-1-P-4-24-T-M12X-S	4x2xAWG24	1	44
2172102	IE-6A-M12X-S-2-P-4-24-T-M12X-S	4x2xAWG24	2	88
2172103	IE-6A-M12X-S-3-P-4-24-T-M12X-S	4x2xAWG24	3	132
2172104	IE-6A-M12X-S-5-P-4-24-T-M12X-S	4x2xAWG24	5	220
2172105	IE-6A-M12X-S-10-P-4-24-T-M12X-S	4x2xAWG24	10	440
2172106	IE-6A-M12X-S-20-P-4-24-T-M12X-S	4x2xAWG24	20	880
straight connector on free conductor end				
2172107	IE-6A-M12X-S-0,5-P-4-24-T-OE	4x2xAWG24	0.5	22
2172108	IE-6A-M12X-S-1-P-4-24-T-OE	4x2xAWG24	1	44
2172109	IE-6A-M12X-S-2-P-4-24-T-OE	4x2xAWG24	2	88
2172110	IE-6A-M12X-S-3-P-4-24-T-OE	4x2xAWG24	3	132
2172111	IE-6A-M12X-S-5-P-4-24-T-OE	4x2xAWG24	5	220
2172112	IE-6A-M12X-S-10-P-4-24-T-OE	4x2xAWG24	10	440
2172113	IE-6A-M12X-S-20-P-4-24-T-OE	4x2xAWG24	20	880
Straight connector to straight socket				
2172128	IE-6A-M12XF-S-0,5-P-4-24-T-M12X-S	4x2xAWG24	0.5	22
2172129	IE-6A-M12XF-S-1-P-4-24-T-M12X-S	4x2xAWG24	1	44
2172130	IE-6A-M12XF-S-2-P-4-24-T-M12X-S	4x2xAWG24	2	88
2172131	IE-6A-M12XF-S-3-P-4-24-T-M12X-S	4x2xAWG24	3	132
2172132	IE-6A-M12XF-S-5-P-4-24-T-M12X-S	4x2xAWG24	5	220
2172133	IE-6A-M12XF-S-10-P-4-24-T-M12X-S	4x2xAWG24	10	440
2172134	IE-6A-M12XF-S-20-P-4-24-T-M12X-S	4x2xAWG24	20	880
socket on free conductor end				
2172177	IE-6A-M12XF-S-0,5-P-4-24-T-OE	4x2xAWG24	0.5	22
2172178	IE-6A-M12XF-S-1-P-4-24-T-OE	4x2xAWG24	1	44
2172179	IE-6A-M12XF-S-2-P-4-24-T-OE	4x2xAWG24	2	88
2172180	IE-6A-M12XF-S-3-P-4-24-T-OE	4x2xAWG24	3	132
2172181	IE-6A-M12XF-S-5-P-4-24-T-OE	4x2xAWG24	5	220
2172182	IE-6A-M12XF-S-10-P-4-24-T-OE	4x2xAWG24	10	440
2172183	IE-6A-M12XF-S-20-P-4-24-T-OE	4x2xAWG24	20	880

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Other lengths and types of connectors are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- EPIC® DATA M12X refer to page 465
- EPIC® DATA CCR FA refer to page 466



EPIC® DATA PN AX RJ45



Info

- For PROFINET applications
- Installation without tools

Product features

- For PROFINET applications
- Housing: zinc die-casting, grey
- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Colour-coded in accordance with PROFINET for Cat.5 applications

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

Technical data

	ETIM 5.0 Class-ID: EC002641 ETIM 5.0 Class-Description: Modular connector (industrial connector)
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +85°C

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire
EPIC® DATA PN AX RJ45							
21700605	ED-IE-AX-5-PN-20-FC	5	9	1.6	1	24 - 22	27 - 22

Photographs are not to scale and do not represent detailed images of the respective products.
10 pieces in one blister



EPIC® DATA PN 90 RJ45



Info

- For PROFINET applications
- Installation without tools
- 4 different angled cable outlets possible

Product features

- For PROFINET applications
- Cable outlet in 4 different 90° angles possible
- Housing: zinc die-casting, grey
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Colour-coded in accordance with PROFINET for Cat.5 applications

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

Technical data

	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +85°C

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire
EPIC® DATA PN 90 RJ45							
21700638	ED-IE-90-6 _A -PN-20-FC	5.5	10	1	1.6	24 - 22	27 - 22

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® DATA AX RJ45 Cat.6_A



Product features

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- Qualified for 10 Gigabit Ethernet
- Housing: zinc die-casting, grey
- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm

- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1- 22/1
- Suitable for use in industrial applications
- Available with colour code T568A or T568B

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)



Info

- CAT.6_A qualified for 10Gbit/s
- Installation without tools

Technical data



ETIM 5.0 Class-ID: EC001121
ETIM 5.0 Class-Description:
Modular connector



Protection rating
IP 20



Ambient temperature (operation)
-40°C to +85°C

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire	AWG 19-wire
RJ45 connector acc. to T568A								
21700600	EPIC® DATA ED-IE-AX-6 _A -A-20-FC	5	9	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568A, specifically for cables with 19-wire cores								
21700615	EPIC DATA ED-IE-AX-6 _A -A-20-FD-FC	5	9	0.85	1.1	26 - 24	27 - 24	26
RJ45 connector acc. to T568B								
21700601	EPIC® DATA ED-IE-AX-6 _B -B-20-FC	5	9	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568B, specifically for cables with 19-wire cores								
21700616	EPIC DATA ED-IE-AX-6 _B -B-20-FD-FC	5	9	0.85	1.1	26 - 24	27 - 24	26

Photographs are not to scale and do not represent detailed images of the respective products.

10 pieces in one blister

An approval is necessary for 19-wire cables by Lapp Group



EPIC® DATA RJ45F Cat.6A

RJ45 female connector



Product features

- Field assembly Industrial Ethernet module RJ45 according to IEC 60603-7-51
- Qualified for 10 Gigabit Ethernet
- Housing: zinc die-casting, grey
- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm

- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG26/1- 22/1
- Suitable for use in industrial applications
- Available with colour code T568A or T568B

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

Technical data



ETIM 5.0 Class-ID: EC001121
ETIM 5.0 Class-Description:
Modular connector



Protection rating
IP 20



Ambient temperature (operation)
-40°C to +70°C

Article number	Article designation
RJ45 Modul acc. to T568A	
21700611	ED-IE-AX-RJ45F-6 _A -A-FC
RJ45 Modul acc. to T568B	
21700612	ED-IE-AX-RJ45F-6 _B -B-FC

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® DATA 90 RJ45 Cat.6_A



Info

- CAT.6_A qualified for 10Gbit/s
- Installation without tools
- 4 different angled cable outlets possible

Product features

- Cable outlet in 4 different 90° angles possible
- Qualified for 10 Gigabit Ethernet
- Housing: zinc die-casting, grey
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG24/1-22/1
- Suitable for use in industrial applications
- Available with colour code T568A or T568B

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

Technical data

	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +85°C

Article number	Article designation	Min. outer diameter (mm)	Max. outer diameter (mm)	Min. Core diameter in mm	Max. Core diameter in mm	AWG solid	AWG 7-wire	AWG 19-wire
RJ45 connector acc. to T568A								
21700636	ED-IE-90-6 _A -A-20-FC	5.5	10	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568A, specifically for cables with 19-wire cores								
21700639	ED-IE-90-6 _A -A-20-FD-FC	5.5	10	0.85	1.1	26 - 24	27 - 24	26
RJ45 connector acc. to T568B								
21700637	ED-IE-90-6 _A -B-20-FC	5.5	10	1	1.6	24 - 22	27 - 22	
RJ45 connector acc. to T568B, specifically for cables with 19-wire cores								
21700640	ED-IE-90-6 _A -B-20-FD-FC	5.5	10	0.85	1.1	26 - 24	27 - 24	26

Photographs are not to scale and do not represent detailed images of the respective products.
An approval is necessary for 19-wire cables by Lapp Group

Info

- CAT.6_A qualified for 10Gbit/s
- Installation without tools

Product features

- Housing: brass nickel plated
- Qualified for 10 Gigabit Ethernet
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG26/1-22/1
- By a multi-level relief setting the connector can accommodate a cable diameter from 5,0 mm up to 9,0 mm

Norm references / Approvals

- Field assembly Industrial Ethernet connector, RJ45 according to IEC 60603-7-51
- UL-listed (E-File E353543)

Technical data

	ETIM 5.0 Class-ID: EC002635 ETIM 5.0 Class-Description: Circular connector (industrial connector)
	Protection rating IP 68
	Ambient temperature (operation) Plug/socket -40°C to +70°C circular housing: -40°C to +85°C

Article number	Article designation
circular connector (male) inclusive RJ45 connector	
21700630	ED-IE-AX-RJ45-6 _A -B-68-FC
dust cap for RJ45 connector	
21700631	ED-IE-AX-RJ45-AC-DC
circular bulkhead housing inclusive RJ45 Modul acc. to T568B	
21700632	ED-IE-RJ45F-6 _A -B-68-FC
dust cap for RJ45 Modul	
21700633	ED-IE-RJ45F-AC-DC

Photographs are not to scale and do not represent detailed images of the respective products.

Data communication systems for ETHERNET technology



Connectors for industrial cabling • Industrial Ethernet connectors RJ45



EPIC® DATA HS RJ45F Cat.6_A

Cat.6_A rail mount adapter



Product features

- Plastic housing including Easy Connect RJ45 Modul Cat.6_A 10G
- Suitable for use in industrial applications
- Integrated strain relief for cable O.D. to 9 mm
- Colour: light grey (RAL 7035)
- Suitable for stranded cores with AWG27/7 -22/7 and for solid conductors with AWG26/1- 22/1

Norm references / Approvals

- Field assembly Industrial Ethernet module RJ45 according to IEC 60603-7-51

Technical data

	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 20
	Ambient temperature (operation) -40°C to +70°C

Article number	Article designation
Inclusive RJ45 Modul acc. to T568A	
21700613	EPIC DATA HS RJ45 F 10G A
Inclusive RJ45 Modul acc. to T568B	
21700614	EPIC DATA HS RJ45 F 10G B

Photographs are not to scale and do not represent detailed images of the respective products.

Data communication systems for ETHERNET technology



Connectors for industrial cabling • M12 Field mountable connectors and wall ducts



EPIC® DATA M12D

M12 D-coded connectors



Product features

- Field assembly Industrial Ethernet connector, M12 D-coded according to IEC 61076-2-101
- Suitable for use in industrial applications
- Robust and vibrations- resistant
- Insulation displacement contacts for conductor diameter of AWG26 - AWG22; max. outer diameter 8 mm
- Toolfree installation, small and compact design

Norm references / Approvals

- Data transmission is conform to category Cat.5 acc. to ISO 11801



Info

- CAT.5-Performance
- Installation without tools

Technical data

	Protection rating IP 67
	Ambient temperature (operation) Plug/socket -40°C to +85°C

Article number	Article designation
PROFINET/ETHERNET, 4-pin straight connector, fast-connection	
22260820	AB-C4-M12MSD-SH
PROFINET/ETHERNET, 4-pin straight socket, fast-connection	
22261016	AB-C4-M12FSD-SH

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® DATA M12X

M12 X-coded connectors



Info

- CAT.6_A qualified for 10Gbit/s
- Installation without tools



Product features

- Field assembly Industrial Ethernet connector, M12 X-coded according to IEC 61076-2-109
- Qualified for 10 Gigabit Ethernet
- Suitable for use in industrial applications
- Robust and vibrations-resistant
- Housing: zinc die-casting, grey
- Insulation displacement contacts for conductor diameter of AWG27/7 - AWG22/7 and AWG24/1 - AWG22/1; max. outer diameter 9,7 mm
- Toolfree installation, small and compact design

Norm references / Approvals

- Acc. to standard IEC 61076-2-109
- Data transmission is conform to category Cat.6_A acc. to ISO/IEC 11801:2010

Technical data

	ETIM 5.0 Class-ID: EC002635 ETIM 5.0 Class-Description: Circular connector (industrial connector)
	Protection rating IP 67
	Ambient temperature (operation) Plug/socket -40°C to +85°C

Article number	Article designation
M12 x-coded male connector straight	
21700602	ED-IE-AX-M12X-6 _A -67-FC
M12 x-coded female connector straight	
21700621	ED-IE-AX-M12XF-6 _A -67-FC
M12 x-coded female connector straight for wall mounting	
21700622	ED-IE-AX-M12XF-RM-6 _A -67-FC

Photographs are not to scale and do not represent detailed images of the respective products.

EPIC® DATA FT IE

Industrial Ethernet feed through



Product features

- Designs for front and rear wall-mounting
- M12 panel feed-throughs for direct connecting with PCB
- Can be used for Industrial Ethernet in harsh industrial environments
- Housing: zinc die-casting, grey

Norm references / Approvals

- Acc. to standard IEC 61076-2
- D-coded: Cat.5 acc. to ISO 11801
X-coded: Cat.6_A acc. to ISO 11801

Technical data

	ETIM 5.0 Class-ID: EC001121 ETIM 5.0 Class-Description: Modular connector
	Protection rating IP 67
	Ambient temperature (operation) -25°C to +85°C

Article number	Article designation
M12 feed through, socket on socket, D-coded	
22262022	AB-C4-DSI-M12FSD-M12FSD-M16-SH
M12 flush-type connector socket for front-mounting, X-coded	
21700617	ED-IE-M12F-X-FM
M12 flush-type connector socket for rear-mounting, solder contacts, X-coded	
21700618	ED-IE-M12F-X-RM

Photographs are not to scale and do not represent detailed images of the respective products.

Data communication systems for ETHERNET technology



Connectors for industrial cabling • Cable coupler



EPIC® DATA CCR FA

Cable coupler round



Product features

- Field mountable cable coupler for data cables up to Cat.7_A
- Compact, round design
- Qualified for 10 Gigabit Ethernet
- Suitable for use in industrial applications
- Robust and vibrations-resistant
- Housing: zinc die-casting, grey

- Insulation displacement contacts for conductor diameter of AWG24/7 - AWG22/7 and AWG24/1 - AWG22/1; max. outer diameter 9,7 mm

Norm references / Approvals

- Compliance to class F_A up to 1000 MHz in connection with Cat.7_A cables
- Data transmission is conform to category Cat.7_A acc. to ISO/IEC 11801



Info

- Cable coupler round class F_A
- Installation without tools

Technical data



ETIM 5.0 Class-ID: EC000371
ETIM 5.0 Class-Description:
Telecommunication terminal strip



Protection rating
IP 67



Ambient temperature (operation)
Plug/socket -40°C to +85°C

Article number	Article designation
EPIC® DATA CCR FA	
21700623	EPIC® DATA CCR FA

Photographs are not to scale and do not represent detailed images of the respective products.

Data communication systems for ETHERNET technology



Ethernet cable for structured building cabling • Cables for fixed installation



UNITRONIC® LAN 200 - Cat.5e

Fixed installation



Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- IEEE 802.3: 10/100/1000Base-T
- IEEE 802.5: ISDN; FDDI; ATM

Norm references / Approvals

- LAN CAT.5e cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class D).

Technical data



ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable



Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Characteristic impedance
100 Ohm +/- 15%



Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C

Product Make-up

- Solid conductor
- U/UTP: no overall or pair shielding
- F/UTP: foil screening as overall screening
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- Outer sheath either as PVC or LSZH (color grey RAL 7035)

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC version					
2170125	200 U/UTP Cat.5e	4 x 2 x AWG24/1	5.6	17	33
2170126	200 F/UTP Cat.5e	4 x 2 x AWG24/1	6.4	18	39
2170128	200 SF/UTP Cat.5e	4 x 2 x AWG24/1	6.7	32	49
Halogen-free versions					
2170173	200 U/UTP Cat.5e LSZH	4 x 2 x AWG24/1	5.6	17	33
2170138	200 SF/UTP Cat.5e LSZH	4 x 2 x AWG24/1	6.7	32	49

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.



UNITRONIC® LAN 250 - Cat.6

Fixed installation



Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).

Product features

- Transfer of digital and analogue data signals
- LAN Cat.6 cables are specified up to 350 MHz
- IEEE 802.3: 10/100/1000Base-T
IEEE 802.5: ISDN; FDDI; ATM

Norm references / Approvals

- Class E out of the standard ISO/IEC 11801 corresponds to CAT.6
- LAN CAT.6 cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class E - permanent link).

Product Make-up

- Solid conductor
- U/UTP: no overall or pair shielding
- F/UTP: foil screening as overall screening
- Outer sheath either as PVC (color grey RAL1015) or LSZH (color orange RAL2003)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Minimum bending radius during installation: 8 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Operating temperature: -20°C to +60°C During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC versions					
2170186	250 U/UTP Cat.6	4 x 2 x AWG24/1	6,5	18	46
Halogen-free versions					
2170193	250 U/UTP Cat.6 LSZH	4x2xAWG24/1	6,5	18	46
2170194	250 F/UTP Cat.6 LSZH	4x2xAWG24/1	7,5	19	54

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Field-Terminable Connector RJ45 CAT.5e FM45 refer to page 476
- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463



UNITRONIC® LAN 500 - Cat.6_A

Fixed installation



Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T IEEE 802.5: ISDN; FDDI; ATM

Norm references / Approvals

- Class E_A out of the standard ISO/IEC 11801 corresponds to Cat.6_A
- LAN Cat.6_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class E_A - permanent link).

Product Make-up

- Solid conductor
- U/FTP: aluminium compound foil as pair screening
- F/FTP: aluminium compound foil as overall screening and pair screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath either as PVC (color grey RAL1015) or LSZH (color orange RAL2003)

Technical data

ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable

Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter

Characteristic impedance
100 Ohm +/- 15%

Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC version					
2170143	500 S/FTP Cat.6 _A	4 x 2 x AWG23/1	7.7	27	58
Halogen-free versions					
2170195	500 U/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.4	21	52
2170196	500 F/FTP Cat.6 _A LSZH	4 x 2 x AWG23/1	7.6	22	56

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

CAT.6a is available as a draft

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463
- DATA STRIP stripping tool refer to page 1001



UNITRONIC® LAN 1000 S/FTP Cat.7

Fixed installation



Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE

Norm references / Approvals

- Class F in the ISO/IEC 11801 standard corresponds to CAT.7

Product Make-up

- Solid conductor
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath: halogen-free, flame-retardant compound
- Colour: yellow (RAL 7032)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Minimum bending radius during installation: 8 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm +/- 15%
	Temperature range Operating temperature: -20 °C to +60 °C During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Halogen-free versions					
2170614	1000 S/FTP Cat.7 LSZH	4 x 2 x AWG23/1	7.7	27	60
2170634	1000 S/FTP Cat.7 duplex	2 x (4 x 2 x AWG23/1)	7.7 x 15.4	54	120

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.



UNITRONIC® LAN 1200 S/FTP Cat.7_A



Info

- Complies with the EN 50173 and ISO/IEC 11801 standards

Benefits

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- The cable is specified for up to 1.2 GHz
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE

Norm references / Approvals

- LAN Cat.7_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (Class F_A - permanent link).
- Exceeds the requirements of EN 50173 and ISO/IEC 11801 standards

Product Make-up

- Solid bare copper wire AWG22
- Cellular polyolefin core insulation, max. core diameter 1.6 mm
- Pair screen made of aluminium-lined plastic foil, overall screening made of tinned-copper braiding
- Outer sheath: halogen-free, flame-retardant compound
- Colour: yellow (RAL 7032)

Technical data



ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable



Minimum bending radius
during installation: 8 x outer diameter
Fixed installation: 4 x outer diameter



Characteristic impedance
100 Ohm +/- 15%



Temperature range
Operating temperature: -20°C to +60°C
During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LAN 1200 S/FTP Cat.7_A					
2170615	1200 S/FTP Cat.7 _A LSZH	4 x 2 x AWG22/1	8.1	34	66
2170618	1200 S/FTP Cat.7 _A LSZH duplex	4 x 2 x AWG22	16.3	68	132

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Drum

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- LANmark-7A GG45 SnapIn Connector refer to page 478
- Multipurpose shears A and B refer to page 998
- DATA STRIP stripping tool refer to page 1001

UNITRONIC® LAN 1500 S/FTP Cat.7_A

LAPP KABEL STUTTGART UNITRONIC® LAN S/FTP 1500 MHz Cat.7A

**Benefits**

- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- Mainly used where the terminal density is very high, e.g. for wiring office, administration and development buildings in the tertiary area (floor wiring).

Product features

- Transfer of digital and analogue data signals
- Cable is specified for up to 1.5 GHz
- The characteristic impedance of this cable is 100 Ohm ± 15 %
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE, VoIP





Norm references / Approvals

- LAN Cat.7_A cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36 as well as ISO/IEC 11801 or EN 50173 (Class F_A - permanent link).
- Exceeds the requirements of EN 50173 and ISO/IEC 11801 standards

Product Make-up

- Solid bare copper wire AWG22
- Cellular polyolefin core insulation, max. core diameter 1.6 mm
- Pair screen made of aluminium-lined plastic foil, overall screening made of tinned-copper braiding
- Outer sheath: halogen-free, flame-retardant compound
- Colour: yellow (RAL 7032)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Minimum bending radius during installation: 8 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm ± 15%
	Temperature range Operating temperature: -20 °C to +60 °C During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)
UNITRONIC® LAN 1500 S/FTP Cat.7 _A				
2170199	1500 S/FTP Cat.7A LSZH	4 x 2 x AWG22/1	8.5	42

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- LANmark-7A GG45 SnapIn Connector refer to page 478



UNITRONIC® LAN OUTDOOR

Fixed installation

LAPP KABEL STUTTGART UNITRONIC® LAN 1000 S/FTP Cat.7 PE

LAPP KABEL STUTTGART UNITRONIC® LAN 1000 S/FTP Cat.7 (L)PE

Benefits

- Suitable for outdoor use and direct burial
- UV-resistant longitudinally and laterally watertight
- LAN cables for structured building cabling according to EN 50173 and ISO/IEC 11801

Application range

- For outdoor use
- Suitable for direct burial
- Cable length in tertiary area (horizontal area, floor) should not exceed a length of 100 m in accordance with the ISO/IEC 11801 and EN 50173 standards (90 m in cable duct + 10 m in working area)

Product features

- Transfer of digital and analogue data signals
- IEEE 802.3: 10/100/1000Base-T, 10GBase-T
- IEEE 802.5: ISDN; FDDI; ATM; cable sharing
- IEEE 802.3at: suitable for PoE

Norm references / Approvals

- LAN Cat.7 cables from Lapp Kabel for "Structured Cabling Systems" meet the requirements in accordance with EIA/TIA-568 and TSB36, as well as ISO/IEC 11801 or EN 50173 (Class F - permanent link).

Product Make-up

- Solid conductor
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Core insulation: foamed polyolefin
- PE outer sheath
- Colour: black (RAL 9005)



Info

- Data cable for primary, secondary and tertiary cabling with PE outer sheath for outdoor applications
- Suitable for direct burial

Technical data



ETIM 5.0 Class-ID: EC000830
ETIM 5.0 Class-Description: Data cable



Minimum bending radius

During installation: 10 x outer diameter
Fixed installation: 4 x outer diameter



Characteristic impedance

100 Ohm +/- 15%



Temperature range

During installation: -15 °C to +60 °C
Operation: -40 °C to +70 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
Suitable for direct burial					
2170198	1000 S/FTP Cat.7 (L)PE	4 x 2 x AWG23/1	10.0	34	90
Suitable for direct routing underground, not transversely waterproof					
2170197	1000 S/FTP Cat.7 PE	4 x 2 x AWG23/1	9.6	34	75

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.



UNITRONIC® LAN FLEX

Flexible use



Info

- Only for patch cable applications (max. 60 m)

Benefits

- For directly connecting two electric components
- Easy to assemble

Application range

- Indoor applications
- LAN connections
- Control cabinet wiring

Product features

- Good flexibility - easy installation with tight space requirements

Product Make-up

- F/UTP: foil screening as overall screening
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening
- S/FTP: copper braid as overall screening and pair screening with aluminium compound foil
- Outer sheath either as PVC or LSZH (color grey RAL 7035)

Technical data

	ETIM 5.0 Class-ID: EC000830 ETIM 5.0 Class-Description: Data cable
	Minimum bending radius during installation: 8 x outer diameter Fixed installation: 4 x outer diameter
	Characteristic impedance 100 Ohm +- 15%
	Temperature range Operating temperature: -20°C to +60°C During installation: 0 °C to +50 °C

Article number	Article designation	Number of pairs and AWG per conductor	Max. outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
PVC versions					
2170127	200 F/UTP Cat.5e	4 x 2 x AWG26/7	5.6	13	28
2170129	200 SF/UTP Cat.5e	4 x 2 x AWG26/7	6.0	22	36
2170144	600 S/FTP CAT7 Y	4 x 2 x AWG26/7	6.5	22	39
Halogen-free versions					
2170172	200 F/UTP Cat.5e LSZH	4 x 2 x AWG26/7	5.6	13	28
2170139	200 SF/UTP Cat.5e LSZH	4 x 2 x AWG26/7	6.0	22	36
2170142	600 S/FTP CAT7 LSZH	4 x 2 x AWG26/7	6.2	21	40

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Detailed data sheets are available upon request. Please specify the type/dimensions of the required cable.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Field-Terminable Connector RJ45 CAT.5e FM45 refer to page 476
- EPIC® DATA AX RJ45 Cat.6_A refer to page 462
- EPIC® DATA 90 RJ45 Cat.6_A refer to page 463



Patchcable RJ45 CAT.5e



Application range

- Indoor applications
- Building Installation

Product features

- F/UTP patch cable CAT.5e
- Foil screening, 300 MHz, grey, FRNC, with Hirose TM 11 connector, also available in different colours, allocation according to TIA/EIA 568B

- S/FTP patch cable CAT.5e
- Foil and braid screening, 300 MHz, grey, FRNC, with Hirose TM 11 connector, also available in different colours, allocation according to TIA/EIA 568B

Technical data



ETIM 5.0 Class-ID: EC000309

ETIM 5.0 Class-Description:

Module for active network component/network unit

Article number	Article designation	Colour	Length (m)
F/UTP patch cable CAT.5e			
CE6547	F/UTP Patch Cable CAT.5e 0,5m GY	grey	0.5
CE6548	F/UTP Patch Cable CAT.5e 1m GY	grey	1
CE6549	F/UTP Patch Cable CAT.5e 1,5m GY	grey	1.5
CE6550	F/UTP Patch Cable CAT.5e 2m GY	grey	2
CE6551	F/UTP Patch Cable CAT.5e 3m GY	grey	3
CE6552	F/UTP Patch Cable CAT.5e 5m GY	grey	5
CE6553	F/UTP Patch Cable CAT.5e 7,5m GY	grey	7.5
CE6554	F/UTP Patch Cable CAT.5e 10m GY	grey	10
CE6555	F/UTP Patch Cable CAT.5e 15m GY	grey	15
CE6556	F/UTP Patch Cable CAT.5e 20m GY	grey	20
S/FTP patch cable CAT.5e			
CE6647	SF/UTP Patch Cable CAT.5e 0,5m GY	grey	0.5
CE6648	Patchcable RJ45 CAT.5e S-FTP 1.0m	grey	1
CE6649	SF/UTP Patch Cable CAT.5e 1,5m GY	grey	1.5
CE6650	SF/UTP Patch Cable CAT.5e 2m GY	grey	2
CE6651	SF/UTP Patch Cable CAT.5e 3m GY	grey	3
CE6652	SF/UTP Patch Cable CAT.5e 5m GY	grey	5
CE6653	SF/UTP Patch Cable CAT.5e 7,5m GY	grey	7.5
CE6654	SF/UTP Patch Cable CAT.5e 10m GY	grey	10
CE6655	SF/UTP Patch Cable CAT.5e 15m GY	grey	15
CE6656	SF/UTP Patch Cable CAT.5e 20m GY	grey	20

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Other colours are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.



Patchcable RJ45 CAT.6 S/FTP



Application range

- Indoor applications
- For use in the workplace (tertiary area) to connect various devices within the scope of "Structured Cabling"

Product features

- PiMF 500 MHz, with Hirose TM21 connector
- Halogen-free
- Configuration is in accordance with TIA/EIA 568B
- Colour: grey; other colours are available upon request

Technical data



ETIM 5.0 Class-ID: EC000309

ETIM 5.0 Class-Description:

Module for active network component/network unit

Article number	Article designation	Colour	Length (m)
S-STP patch cable CAT.6			
CE6847	S/FTP Patchcable CAT.6 0,5m GY	grey	0.5
CE6848	S/FTP Patchcable CAT.6 1m GY	grey	1
CE6849	S/FTP Patchcable CAT.6 1,5m GY	grey	1.5
CE6850	S/FTP Patchcable CAT.6 2m GY	grey	2
CE6851	S/FTP Patchcable CAT.6 3M GY	grey	3
CE6852	S/FTP Patchcable CAT.6 5m GY	grey	5
CE6853	S/FTP Patchcable CAT.6 7,5m GY	grey	7.5
CE6854	S/FTP Patchcable CAT.6 10m GY	grey	10
CE6855	S/FTP Patchcable CAT.6 15m GY	grey	15
CE6856	S/FTP Patchcable CAT.6 20m GY	grey	20

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Other colours are available upon request.

Photographs are not to scale and do not represent detailed images of the respective products.



LANmark-6 RJ45 Patchcord

Product features

- 10Gigabit Ethernet
- The patchcord fully complies to Category 6, maximising the channel performance and exceeding the requirements of ISO/IEC 11801:2002 as part of a LANmark-6 wiring of Class E. This offers an improved data transmission rates and enables the inclusion of consolidation points for maximum system flexibility.
- Halogen-free, flame-retardant sheath with lower smoke development
- Screened version

Technical data



ETIM 5.0 Class-ID: EC000309
ETIM 5.0 Class-Description:
Module for active network component/
network unit



Article number	Article designation	Colour	Length (m)
LANmark-6 RJ45 Patchcord			
CE6147	LANmark-6 RJ45 Patchcord 0.5m	orange	0.5
CE6148	LANmark-6 RJ45 Patchcord 1.0m	orange	1
CE6149	LANmark-6 RJ45 Patchcord 1.5m	orange	1.5
CE6150	LANmark-6 RJ45 Patchcord 2.0m	orange	2
CE6151	LANmark-6 RJ45 Patchcord 3.0m	orange	3
CE6152	LANmark-6 RJ45 Patchcord 5.0m	orange	5
CE6154	LANmark-6 RJ45 Patchcord 10.0m	orange	10
CE6155	LANmark-6 RJ45 Patchcord 15.0m	orange	15

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Info

- Cat.5e

Product features

- For interconnecting two computers without the use of a central active component (hub, switch...).
- SF/UTP: braid of tinned copper wire and plastic laminated aluminum foil as overall screening

- Outer sheath: halogen-free, flame-retardant compound
- Hirose TM 11 connector
- Outer sheath and anti-kink sleeve colour: red

Technical data



ETIM 5.0 Class-ID: EC000309
ETIM 5.0 Class-Description:
Module for active network component/
network unit

Article number	Article designation	Colour	Length (m)
Crossover patch cable			
CE6660	Crossover Patchcable RJ45 CAT.5e S-FTP 2.0m	red	2
CE6661	Crossover Patchcable RJ45 CAT.5e S-FTP 3.0m	red	3
CE6662	Crossover Patchcable RJ45 CAT.5e S-FTP 5.0m	red	5
CE6664	Crossover Patchcable RJ45 CAT.5e S-FTP 10.0m	red	10

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Photographs are not to scale and do not represent detailed images of the respective products.

Connector RJ45 CAT.5 Hirose TM11



Product features

- Screened version
- Suitable for stranded conductors (AWG26)
- Included: bend protection and guide plate
- Anti-kink protection: beige
- Max. outer sheath diameter: 5.8 mm

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)

Article number	Article designation
Connector RJ45 CAT.5 Hirose TM11	
CE6321	Connector RJ45 CAT.5 Hirose TM11

Hirose is a registered trademark of the HIROSE ELECTRIC Group
Other colours are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Crimping tool RJ45 Hirose refer to page 478

Connector RJ45 CAT.5 Stewart SS37



Product features

- Screened version
- Suitable for stranded conductors (AWG26)
- Included: bend protection and guide plate
- Anti-kink protection: light grey
- Max. outer sheath diameter: 5.72 mm

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)

Article number	Article designation
Connector RJ45 CAT.5 Stewart SS37	
CE6323	Connector RJ45 CAT.5 Stewart SS37

Stewart is a registered trademark of Bel Fuse Inc.
Other colours are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Crimping tool RJ45 Stewart refer to page 479

Field-Terminable Connector RJ45 CAT.5e FM45



Product features

- Screened version
- Suitable for AWG 23 - 26, AWG 22 possible with restrictions
- IDC/piercing terminal according to 60352-4
- Suitable for solid and stranded conductors
- Suitable for use in industrial applications

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)



Protection rating
IP 20



Ambient temperature (operation)
-20°C to +70°C

Article number	Article designation
RJ45 connector acc. to T568A	
21700540	Field-Terminable Connector RJ45 CAT.5e FM45

Photographs are not to scale and do not represent detailed images of the respective products.

Connector RJ45 CAT.6 Hirose TM21

Product features

- Channel Class E up to 250 MHz (CAT.6)
- Fully screened
- Conductor: Ø 0.5 mm solid wire:
AWG 24 & 26;
guide plate for 1.1 mm diameter wire;
cable outer diameter: 6.6 mm
- Easy to handle
- Included: bend protection and guide plate
- Anti-kink protection: beige
- Suitable for solid and stranded conductors

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)



Article number	Article designation
Connector RJ45 CAT.6 Hirose TM21	
CE6324	Connector RJ45 CAT.6 Hirose TM21

Hirose is a registered trademark of the HIROSE ELECTRIC Group
Other colours are available upon request.
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Crimping tool RJ45 Hirose refer to page 478

LANmark-6 EVO SnapIn Connector

Product features

- CAT.6 socket screened incl. EMC cover
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.6/Class E according to EN 50173:2002 and ISO/IEC 11801:2002 are supported:
- 10BaseT

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)



Article number	Article designation
LANmark-6 EVO SnapIn Connector	
62104	LANmark-6 EVO SnapIn Connector

Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-6 EVO SnapIn Connector AWG26

Product features

- CAT.6 socket screened incl. EMC cover
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.6/Class E according to EN 50173:2002 and ISO/IEC 11801:2002 are supported:

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)



Article number	Article designation
LANmark-6 EVO SnapIn Connector AWG26	
62105	LANmark-6 EVO SnapIn Connector AWG26

Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-6 EVO SnapIn Connector 10G



Product features

- Suitable for AWG 22, 23 and 24
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All services of CAT.6/Class E according to EN 50173:2002 and ISO/IEC 11801:2002, as well as for 10 Gigabit Ethernet according to IEEE 802.3an draft 1.11, are supported:

Technical data



ETIM 5.0 Class-ID: EC001121
ETIM 5.0 Class-Description:
Modular connector

Article number	Article designation
LANmark-6 EVO SnapIn Connector 10G	
62106	LANmark-6 EVO SnapIn Connector 10G

Photographs are not to scale and do not represent detailed images of the respective products.

LANmark-7_A GG45 SnapIn Connector



Product features

- CAT.7 GG45 socket screened incl. EMC cover
- Suitable for AWG 22, 23 and 24
- Colour-coded in accordance with EIA/TIA 568A and B
- Fast and optimised termination of all 8 cores
- Suitable for modular components
- All applications defined for CAT.5 / 6 and 7 are supported:

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)

Article number	Article designation
LANmark-7_A GG45 SnapIn Connector	
63104	LANmark-7A, 1000 MHz Snap-In GG45 Conn.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Keystone Clips for SnapIn Connectors refer to page 481

Crimping tool RJ45 Hirose



Product features

- Crimping tool for RJ45 connector Hirose TM11 and TM21

Technical data



ETIM 5.0 Class-ID: EC000385
ETIM 5.0 Class-Description: Special tool for telecommunication technique

Article number	Article designation
Crimping tool RJ45 Hirose	
CE5091	Crimping tool RJ45 Hirose TM11/TM21 8-pole

Hirose is a registered trademark of the HIROSE ELECTRIC Group

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.5 Hirose TM11 refer to page 476
- Connector RJ45 CAT.6 Hirose TM21 refer to page 477

Crimping tool RJ45 Stewart

Product features

- Crimping tool for RJ45 connector CAT.5 Stewart SS37
- Crimping tool for RJ plug 4, 6, 6-DEC and 8-pin

Technical data



ETIM 5.0 Class-ID: EC000385
ETIM 5.0 Class-Description: Special tool for telecommunication technique



Article number	Article designation
Crimping tool RJ45 Stewart	
CE5093	Crimping tool RJ45 Stewart SS37 8-pole
CE5092	Crimping tool RJ 4-, 6-, 6-DEC- and 8-pole

Stewart is a registered trademark of Bel Fuse Inc.

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Connector RJ45 CAT.5 Stewart SS37 refer to page 476

Product features

- This tool is recommended for quick, easy and reliable installation of Snapln connectors. All 8 cores are terminated in one simple step.
- The marking on the pliers defines the correct stripping dimension.

Technical data



ETIM 5.0 Class-ID: EC000385
ETIM 5.0 Class-Description: Special tool for telecommunication technique



Article number	Article designation
Comfort Tool	
60501	Comfort Tool

Photographs are not to scale and do not represent detailed images of the respective products.

Easy Termination Tool

Product features

- Precise and fast removal of pair screening in PiMF cables.
- All foils are removed at exactly the same length, ensuring that the distances of the four foil screens match the available space on the GG45.
- The integrated holder for the wire manager simplifies insertion of the cores. Simple handling for quick and reproducible stripping results.
- An application sheet is included. The piercing terminals are adjustable and replaceable.

Technical data



ETIM 5.0 Class-ID: EC000385
ETIM 5.0 Class-Description: Special tool for telecommunication technique



Article number	Article designation
Easy Termination Tool	
60503	Easy Termination Tool

Caution! The Easy Termination Tools are meant for GG45 installation.

Photographs are not to scale and do not represent detailed images of the respective products.

Patchpanel Modular extendable



Product features

- 19" modular patch panel, extendable
- Front screen can be pulled out and swivelled at an angle of 45°, allowing simple and fast installation, as well as simple maintenance (sliding mechanism)
- 24 connections with integrated dust-protection caps
- Compatible with all Snap-In Connectors
- Stable metal structure
- Flexible label for the numbering system
- Dimensions: 19" - 1RU - 125 mm
- Colour: grey-white (RAL 9002)

Technical data



ETIM 5.0 Class-ID: EC002601
ETIM 5.0 Class-Description: Box/
housing for built-in mounting in the
wall/ceiling

Article number	Article designation
Patchpanel Modular extendable	
60124	Patchpanel Modular extendable

Delivered without snap-in connectors!

Photographs are not to scale and do not represent detailed images of the respective products.

Frontplate 19" 1HE Cat.6_A

Product features

- 19" modular patch panel, for fixed installation
- 24 Ports
- Stable metal structure
- Dimensions: 19" - 1RU
- Colour: grey (RAL 7035)
- Unpopulated
- Incl. cable strain relief and cable ties
- On frontplate portnumbers are printed on
- Potential equalisation with incl. grounding set (0,3 m)



Info

- Specially for RJ45 Cat.6_A female connector

Technical data



ETIM 5.0 Class-ID: EC002601
ETIM 5.0 Class-Description: Box/
housing for built-in mounting in the
wall/ceiling

Article number	Article designation
Frontplate 19" 1HE Cat.6_A	
24441122	Frontplate 19" 1HE Cat.6 _A

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® DATA RJ45F Cat.6A refer to page 462

Keystone Clips for EVO SnapIn Connectors



Product features

- Red keystone clips for LANmark EVO SnapIn with keystone format (wall thickness 1.5 - 1.75 mm)
- Suitable for EVO SnapIn Connectors
- Not suitable for GG45 connectors

Technical data



ETIM 5.0 Class-ID: EC002601
ETIM 5.0 Class-Description: Box/
housing for built-in mounting in the
wall/ceiling

Article number	Article designation
Keystone Clips for EVO SnapIn Connectors	
61203	Keystone Clips for EVO SnapIn Connectors

Photographs are not to scale and do not represent detailed images of the respective products.

Keystone Clips for SnapIn Connectors

Product features

- Keystone clips for LANmark SnapIn with keystone format
- Suitable for GG45 Connectors
- Not suitable for EVO SnapIn Connectors

Technical data



ETIM 5.0 Class-ID: EC002601
ETIM 5.0 Class-Description: Box/
housing for built-in mounting in the
wall/ceiling



Article number	Article designation
Keystone Clips for SnapIn Connectors	
61201	Keystone Clips for SnapIn Connectors

Photographs are not to scale and do not represent detailed images of the respective products.

SnapIn rail mount Adapter

Product features

- Plastic housing including CAT.6 SnapIn Connector
- Suitable for use in industrial applications
- Angled outlet at 45°
- Several adapters can be connected in series
- Covers packed in pairs (right/left)
- Side cover for SnapIn rail adapter (60797)
- Colour: pure white (RAL 9010)

Technical data



ETIM 5.0 Class-ID: EC002641
ETIM 5.0 Class-Description:
Modular connector (industrial connector)



Article number	Article designation
SnapIn rail mount Adapter	
60795	SnapIn rail mount Adapter

Photographs are not to scale and do not represent detailed images of the respective products.

Flush-Mounted Outlet LSA+

Suitable housing

- Surface-Mounted Case (84x84 mm) and coverplate

Product features

- Flush-mounted outlet 80 x 80 LSA+ CAT.6
- 2x RJ45 angled outlet
- Colour-coded in accordance with EIA/TIA 568A and B
- Suitable for cable types (AWG 22, 23 and 24)
- Colour: pure white (RAL 9010)

Technical data



ETIM 5.0 Class-ID: EC000371
ETIM 5.0 Class-Description:
Telecommunication terminal strip



Article number	Article designation
Flush-Mounted Outlet LSA+	
62722	Flush-mounted outlet 80 x 80 LSA+ CAT.6

Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- Punch down tool LSA+ refer to page 482

Data Binder LSA+



Product features

- A data connector allows installation cables to be easily extended and damaged cables to be replaced, without having to reinstall the entire cable network.
- Cable inlet 7.5 mm
- Screw-adjustable strain relief
- Adhesive strips for fastening

Technical data



ETIM 5.0 Class-ID: EC000309
ETIM 5.0 Class-Description:
Module for active network component/
network unit

Article number	Article designation
Data Binder LSA+	
CE6382	Data Binder LSA+ CAT.6

Photographs are not to scale and do not represent detailed images of the respective products.

Punch down tool LSA+



Product features

- LSA+ punch-down tool for setting the individual cores on the data outlets or patch panel.
- Cores are set properly in the terminal strip and cut off at the same time.

Technical data



ETIM 5.0 Class-ID: EC000385
ETIM 5.0 Class-Description: Special
tool for telecommunication technique

Article number	Article designation
Punch down tool LSA+	
CE5076	Punch down tool LSA+

Photographs are not to scale and do not represent detailed images of the respective products.