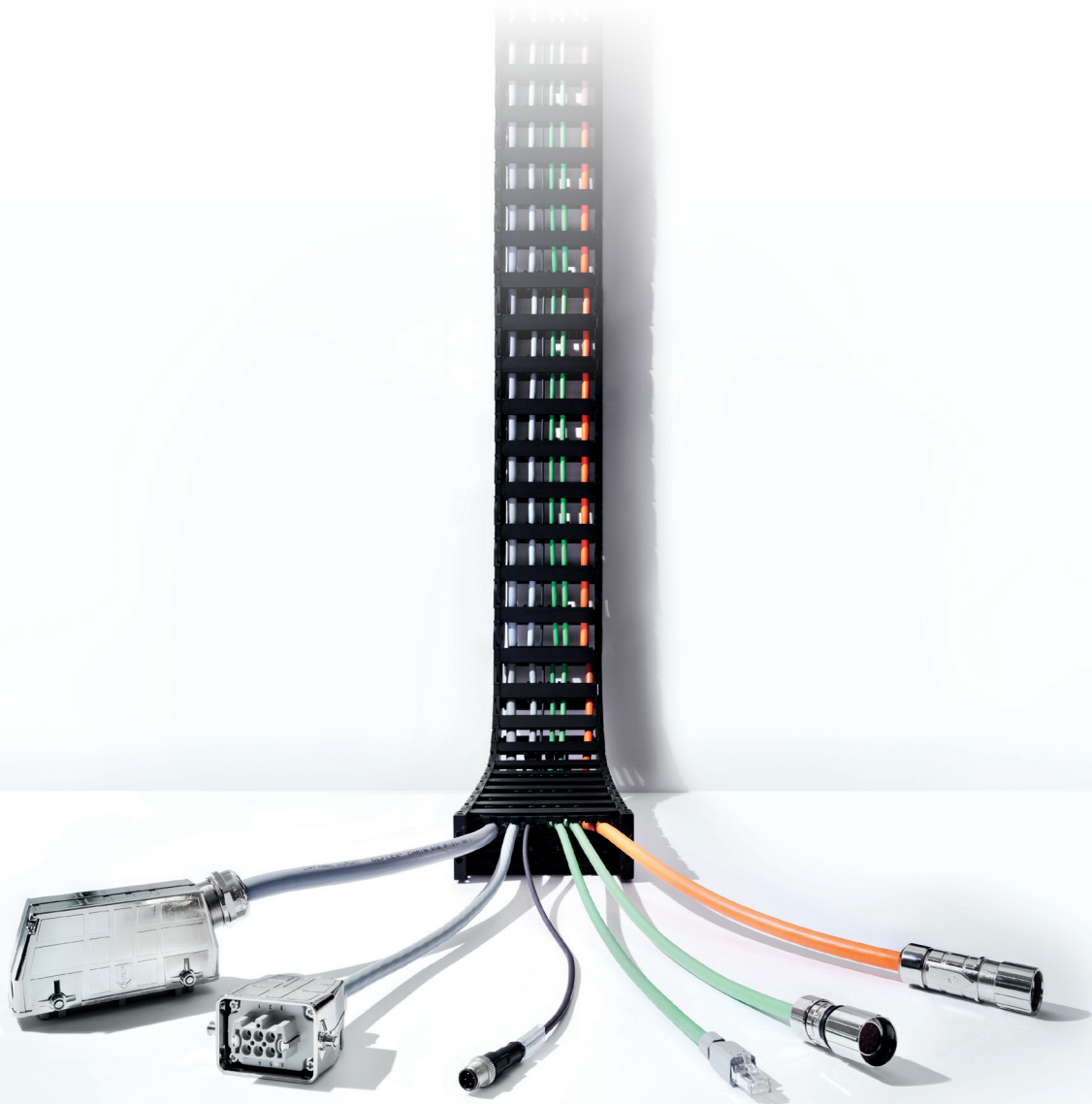


# CONNECTIVITY SOLUTIONS

for Continuous Flex Applications

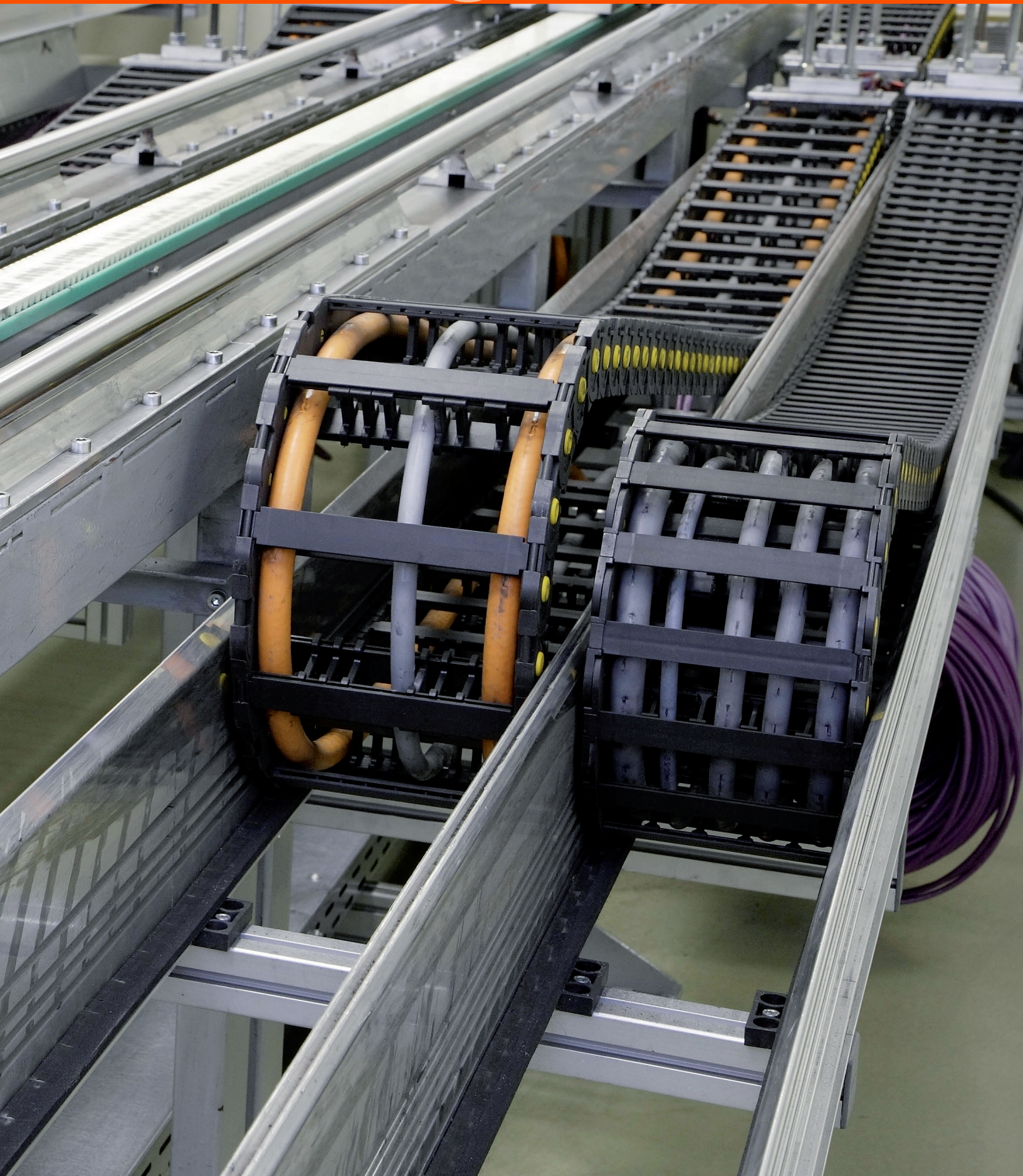


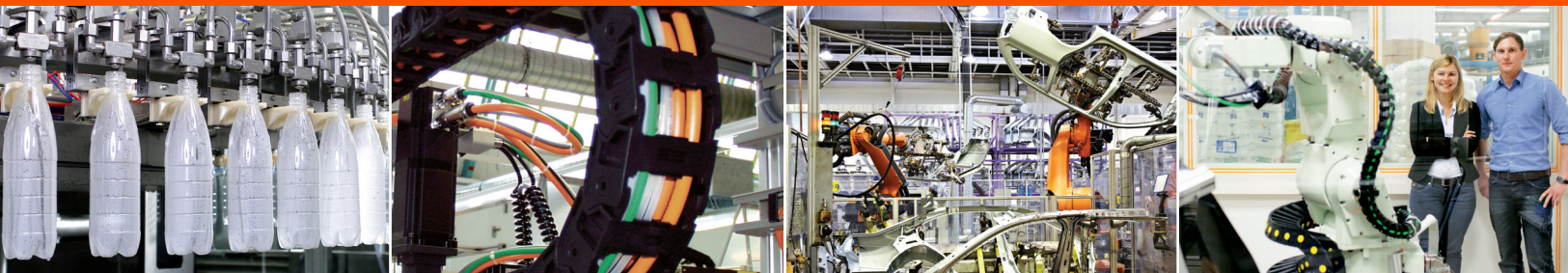
make the right connection



**LAPP GROUP**

make the right connection





At Lapp Group, we understand the critical role our products play in a wide array of industries and manufacturing applications. Our business partners depend on the quality, performance, and durability of our connectivity solutions to keep their facilities and lines up and running, even in the most demanding conditions. For over 20 years, Lapp Group's continuous flex power and control cables have demonstrated unsurpassed reliability in the most rigorous industrial plant applications. Superior stranding and specially formulated insulation and jacket compounds optimize flex life and provide excellent resistance to a wide variety of mineral oils, synthetic oils, contaminants, and water-based coolants.

The quality of a motion control system is only as good as its components. The most effective components are cables designed specifically for continuous flex applications. Lapp Group has invested in new cable track testing facilities at our in-house testing centers to guarantee the highest quality standards. At these facilities, the cables must meet rigorous testing requirements, including up to 10 million bending cycles, travel speeds of 10 m/s, and acceleration/ deceleration up to 100 m/s<sup>2</sup>.

When you need cables that can withstand motion and continuous flexing at the ultimate limit without damage, Lapp Group's continuous flex power and control cables are the ones you can trust.

When you choose Lapp Group, you connect with a company that combines international capabilities with domestic manufacturing, ensuring product quality and availability. And you connect with unrivaled customer support that is with you every step of the way.

**The right connection.**

To find out how Lapp Group and our full line of continuous flex products can help your operation, please visit us at [lappgroupna.com](http://lappgroupna.com) or call us at **1-800-774-3539**.

Cable	Performance	Size	Conductors	Insulation	Shielding	Jacket	Bend Radius
<b>Power &amp; Control</b>							
ÖLFLEX® CHAIN 896 P	Extended	16 - 4 AWG	4 - 5	PP	-	PUR	7.5 x OD (up to 6 AWG); 10 x OD (4 AWG)
ÖLFLEX® FD 855 P	Extended	20 - 14 AWG	2 - 41	TPE	-	PUR	5 x OD
ÖLFLEX® FD 855 CP	Extended	20 - 14 AWG	2 - 36	TPE	x	PUR	7.5 x OD
ÖLFLEX® FD 890	Core	20 - 2 AWG	3 - 50	PVC	-	PVC	7.5 x OD
ÖLFLEX® FD 890 CY	Core	20 - 6 AWG	3 - 34	PVC	x	PVC	10 x OD
ÖLFLEX® FD 810	Core	20 - 6 AWG	2 - 50	PVC	-	PVC	7.5 x OD
ÖLFLEX® FD 810 CY	Core	20 - 6 AWG	2 - 41	PVC	x	PVC	7.5 x OD
ÖLFLEX® FD AUTO-X	Core	18 - 16 AWG	3 - 65	PVC/Nylon	-	TPE	10 x OD
ÖLFLEX® FD 90	Core	8 - 500 KCMIL	1	PVC	-	PVC	7.5 x OD
ÖLFLEX® FD 90 CY	Core	8 - 500 KCMIL	1	PVC	x	PVC	7.5 x OD
ÖLFLEX® CHAIN 809	Basic	20 - 12 AWG	2 - 25	PVC	-	PVC	10 - 12 x OD
ÖLFLEX® CHAIN 809 CY	Basic	20 - 12 AWG	2 - 25	PVC	x	PVC	10 - 12 x OD
<b>SERVO &amp; VFD</b>							
ÖLFLEX® SERVO FD 796 CP	Extended	16 - 1 AWG	4 + (0, 1, or 2pr)	PP	x	PUR	7.5 x OD (up to 6 AWG); 10 x OD (4 AWG & larger)
ÖLFLEX® SERVO FD 798 CP	Extended	26 - 18 AWG	6 - 16	PP	x	PUR	7.5 x OD
ÖLFLEX® FD VFD	Core	14 -10 AWG	4	LSG	x	PVC	7.5 x OD

Cable	Performance	Size	Conductors	Insulation	Shielding	Jacket	Bend Radius
<b>Data &amp; Signal</b>							
UNITRONIC® FD CP (TP) plus	Extended	26 - 18 AWG	2 - 14 (twisted pair)	Polyolefin	x	PUR	7.5 x OD
UNITRONIC® FD CP plus	Extended	26 - 22 AWG	2 - 25	Polyolefin	x	PUR	7.5 x OD
UNITRONIC® FD P plus	Extended	26 - 22 AWG	3 - 25	Polyolefin	-	PUR	5 x OD
UNITRONIC® FD 890	Core	24 - 22 AWG	3 - 25	PVC	-	PVC	7.5 x OD
UNITRONIC® FD CY	Core	26 - 22 AWG	2 - 25	PVC	x	PVC	7.5 x OD
UNITRONIC® FD	Core	26 - 22 AWG	2 - 25	PVC	-	PVC	5 x OD

Cable	Bus System	Size	Conductors/ Pairs	Insulation	Shielding	Jacket	Bend Radius
<b>Bus</b>							
UNITRONIC® BUS ASI FD	AS-Interface	16 - 14 AWG	2	PUR or TPE	-	PUR or TPE	24 mm
UNITRONIC® BUS CAN FD	CAN	24 - 20 AWG	1 pr - 2 pr	PE	x	PUR	15 x OD
UNITRONIC® BUS DeviceNet THICK FD	DeviceNet™	18 + 14 or 15 AWG	2 pr	PVC or PE (power) and PE	x	PVC or PUR	15 x OD
UNITRONIC® BUS DeviceNet THIN FD	DeviceNet™	24 + 22 AWG	2 pr	PVC or PE (power) and PE	x	PVC or PUR	15 x OD
UNITRONIC® BUS Interbus FD	Interbus	24 + 18 AWG	3 pr + 3c	PE	x	PUR	15 x OD
UNITRONIC® BUS PB FD	PROFIBUS®	24 AWG	1 pr	PE	x	PUR	9 x OD
UNITRONIC® BUS PB FD FC	PROFIBUS®	24 AWG	1 pr	PE	x	PUR	15 x OD
UNITRONIC® BUS PB FD HYBRID	PROFIBUS®	24 + 16 AWG	1 pr + 4c	PVC (power) and PE	x	PVC	15 x OD
UNITRONIC® BUS CC-Link FD	CC-Link	20 AWG	3c	PE	x	PUR	8 x OD
UNITRONIC® BUS LD FD P	RS485 / RS422	24 AWG	1 pr - 3 pr	PE	x	PUR	15 x OD
UNITRONIC® SENSOR FD	Sensor / Actuator	24 -22 AWG	3 - 8	PP	x (optional)	PUR	10 x OD

Cable	Standards	Size	Conductors	Insulation	Shielding	Jacket	Bend Radius
<b>Industrial Ethernet</b>							
ETHERLINE® FD Cat.6A	Profinet; Ethercat	24 AWG	4 pr	Polyolefin	x	PVC or PUR	15 x OD
ETHERLINE® FD Cat.6	Ethercat	26 AWG	4 pr	PP	x	PUR	7.5 x OD
ETHERLINE® FD P Cat.5e	Ethercat	26 AWG	4 pr	Polyolefin	x	PUR	15 x OD
ETHERLINE® FD Cat.5e	Profinet; Ethercat	26 AWG	2 pr	Polyolefin	x	PUR	15 x OD
ETHERLINE® FD Cat.5	Profinet	22 AWG	2 pr	PE	x	PUR	15 x OD

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Distance	Bending Cycles	Voltage	Temperature Range	Oil Resistance	UV Resistance	Halogen-free	Approvals
300 ft	10 million	1000V; IEC: 600/1000V	-40°C to +80°C	x	x	x	
300 ft	10 million	1000V; IEC: 300/500V	-40°C to +80°C	x	x	x	
300 ft	10 million	1000V; IEC: 300/500V	-40°C to +80°C	x	x	x	
30 ft	5 million	600V	-5°C to +90°C	x	x	-	
30 ft	5 million	600V	-5°C to +90°C	x	x	-	
30 ft	5 million	IEC: 300/500V	0°C to +70°C	-	-	-	
30 ft	5 million	IEC: 300/500V	0°C to +70°C	-	-	-	
30 ft	5 million	600V (TC-ER/AWM); 1000V (WTTC)	-5°C to +90°C; -25°C to +90°C (TC-ER)	x	x	-	
30 ft	5 million	600V; IEC: 600/1000V	-5°C to +90°C	x	x	-	
30 ft	5 million	600V; IEC: 600/1000V	-5°C to +90°C	x	-	-	
15 ft	2 million	1000V; IEC: 300/500V	0°C to +80°C	x	-	-	
15 ft	2 million	1000V; IEC: 300/500V	0°C to +80°C	x	-	-	

300 ft	10 million	1000V; IEC: 600/1000V	-40°C to +80°C	x	x	x	
300 ft	10 million	30V; IEC: 30V	-40°C to +80°C	x	x	x	
30 ft	5 million	600V (TC-ER); 1000V (WTTC / Flexible Motor Supply)	-5°C to +90°C; -25°C to +90°C (TC-ER)	x	x	-	

Distance	Bending Cycles	Voltage	Temperature Range	Oil Resistance	UV Resistance	Halogen-free	Approvals
300 ft	10 million	250V (not for power)	-40°C to +80°C	x	x	x	
300 ft	10 million	250V (not for power)	-40°C to +80°C	x	x	x	
300 ft	10 million	250V (not for power)	-40°C to +80°C	x	x	x	
30 ft	5 million	300V (not for power)	-5°C to +90°C	x	-	-	
30 ft	5 million	350V (not for power)	-5°C to +70°C	x	x	x	
30 ft	5 million	350V (not for power)	-5°C to +70°C	x	x	x	

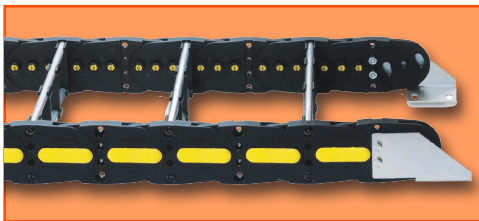
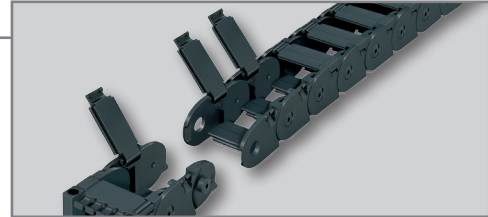
Distance	Bending Cycles	Voltage	Temperature Range	Oil Resistance	UV Resistance	Halogen-free	Approvals
15 ft	2 million	300V (not for power)	-30°C to +80°C (PUR); -30°C to +105°C (TPE)	x	x	x (PUR)	
30 ft	5 million	250V (not for power)	-30°C to +70°C	x	x	x	
30 ft	5 million	300V (not for power)	-40°C to +75°C (PUR); -10°C to +75°C (PVC)	x	x (PUR)	x (PUR)	
15 ft	2 million	30V (not for power)	-40°C to +75°C (PUR); -10°C to +75°C (PVC)	x	x (PUR)	x (PUR)	
150 ft	5 million	250V (not for power)	-30°C to +70°C	x	x	x	
15 ft	5 million	250V (not for power)	-30°C to +70°C	x	x	x	
15 ft	5 million	250V (not for power)	-30°C to +70°C	x	x	x	
15 ft	2 million	600V (not for power)	-5°C to +80°C	x	-	-	
150 ft	5 million	300V (not for power)	-40°C to +80°C	x	x	x	
15 ft	2 million	250V (not for power)	-30°C to +70°C	x	x	x	
150 ft	5 million	300V (not for power)	-15°C to +80°C	x	x	x	

Distance	Bending Cycles	Voltage	Temperature Range	Oil Resistance	UV Resistance	Halogen-free	Approvals
15 ft	2 million	125V (not for power)	-10°C to +70°C	x	x (PUR)	x (PUR)	
15 ft	2 million	100V (not for power)	-30°C to +70°C	x	x	x	
15 ft	2 million	1000V (not for power)	-20°C to +70°C	x	x	x	
15 ft	2 million	1000V (not for power)	-20°C to +60°C	x	x	x	
15 ft	2 million	100V (not for power)	-5°C to +50°C	x	x	x	

# cable chain

## SILVYN® Nylon Cable Chain

Lapp Group's nylon cable chains feature a lightweight open design, and are available in many sizes including standard, small, and large widths.



## SILVYN® Hybrid Cable Chain

Lapp Group's hybrid cable chains come in an open or tubed design with customizable widths. Their hybrid nylon chain/aluminum frame construction optimizes operational stability for large loads.

## SILVYN® Protection Series Cable Chain

Lapp Group's protective cable chains feature a completely enclosed design to avoid any contact between cables and metal, wood chips, dust, etc. Each link has a quickly removable cover for easy installation of the cables/hoses complete with their fittings.

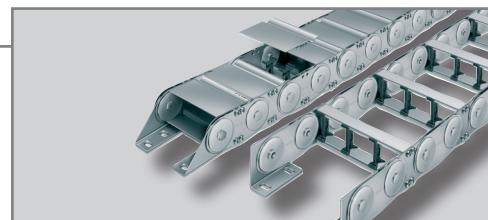


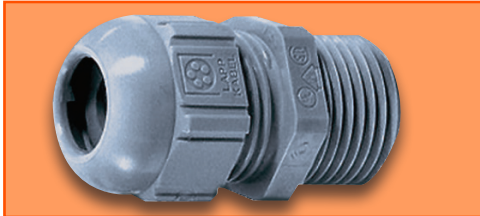
## SILVYN® Flexible Multi-Axis Chain

Lapp Group's multi-axis cable chains are ideal for 3D movement. They feature torsion capability up to 200° and guided rotation angle up to 400°.

## SILVYN® Steel Cable Chain

Lapp Group's steel cable chains are rugged, heavy duty, and scalable to extreme size and load applications. And they are mechanical and corrosion resistant for the harshest environments.



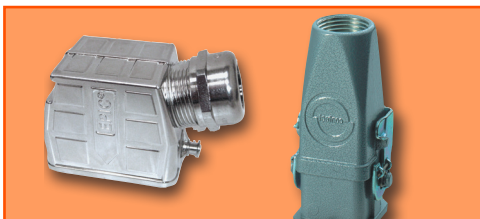


## SKINTOP® Cable Glands

Secure connections are critical to reliable performance. SKINTOP® polyamide and metallic strain relief cable glands make cable termination fast and easy.

## EPIC® Circular Connectors

EPIC® CIRCON LS1 (power) and CIRCON M23 (control/feedback) series circular connectors are ideal for servo motor and general supply applications; ensuring quick and easy assembly, high reliability, and protection from wash down, vibration, and EMC. The result is long uninterrupted service in tough industrial environments.



## EPIC® Rectangular Connectors

EPIC® rectangular connectors provide secure and reliable electrical connections for a wide variety of power, control, and data applications in harsh industrial environments. For the toughest industrial environments, EPIC® ULTRA HB Housings have a hard, conductive, nickel surface finish with stainless steel latching hardware for strength, corrosion resistance, and EMC protection.

## EPIC® Pin & Sleeve Connectors

EPIC® IEC60309 pin & sleeve connectors are designed to meet the power connectivity needs and safety requirements of North American and European industrial applications. Suitable for indoor and outdoor single- and three-phase power circuits, they are color coded and keyed to match the electrical supply. Choose from the cost-saving MULTIMAX series, or the traditional CEE series.



ÖLFLEX®

UNITRONIC®

EPIC®

SKINTOP®

ETHERLINE®

HITRONIC®

SILVYN®

FLEXIMARK®

For more information or to connect with your local

Lapp Group representative please visit

**[lappgroupna.com](http://lappgroupna.com)**