

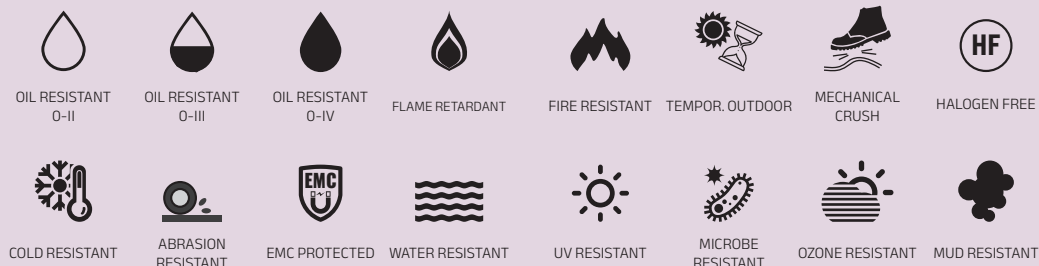
MOTION**FIELD**BUS

CABLE SOLUTIONS FOR THE MAIN FIELDBUS PROTOCOL

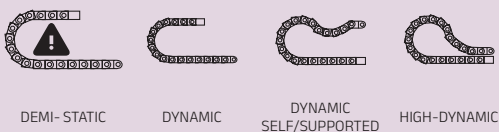
ICONS

Summary of the icons you will find in the catalogue pages, grouped by relevant area

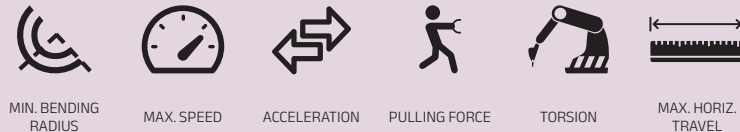
RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



DURABILITY IN MECHANICAL & THERMAL CONDITIONS



BALANCED APPLICATION & STANDARD INTEGRATED COMPLIANCE



ELECTRICAL PROPERTIES



Use the icons for a fast summary and a general idea of the related product features. More details on product characteristics are available in the proper sections of each product page.

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Safety notice.

The cables and wires described in the catalogue are produced in accordance with national and international standards, as well as plant standards; application safety, as stipulated in the safety directives, standards, and statutory regulations, as amended, are provided. Following proper installation and usage guidelines, the possibility of product-specific dangers can be excluded. This catalogue describes general information for each product's use. Installation and processing must only be executed by qualified electricians.

CONTENTS

MOTION**FIELD**BUS

DRIVEConn[®] MTBUS

FIELD BUS CABLES FOR AUTOMATION & MOTION NETWORKS

In a highly automated industrial environment, the quality and integrity of data transmission are crucial for the efficiency and safety of the entire plant. The DRIVEConn[®] MTBUS range is engineered to meet the electrical, mechanical, and EMC requirements of the major industrial Fieldbus protocols, ensuring high performance even in harsh environments.

The DRIVEConn[®] MTBUS line offers high-performance cables designed to meet the electrical and EMC parameters mandated by Fieldbus standards. Each configuration is optimized for signal integrity, mechanical resilience, and regulatory compliance.

Whether for fixed installations, dynamic use, or high-stress applications, MOTIONCABLES ensures complete adherence to OEM and international specifications (UL, CSA, IEC, ODVA, PI, CiA), making DRIVEConn[®] cables a solid choice for high-performance automation systems.

PERFORMANCE LEVEL	Suggested Usage Conditions	Insulation	Outer Sheath	Key Features
BASIC PERFORMANCE	Static or Demi-Static installation	PE, Foam-Skin PE, or PP	PVC	Flexibility, Oil/Fluid Resistance, Flame Retardant
DYNAMIC PERFORMANCE	Dynamic installation (cable carriers)	PE, Foam-Skin PE, or PP	PVC TM5	Designed for Repeated Bending, High performance in Dynamic Environments
HIGH DYNAMIC PERFORMANCE	Severe dynamic, robotics	PE, Foam-Skin PE, or PP	Polyurethane (FRHF PUR)	High flexibility even at low temperatures, Chemical Resistance, Halogen-Free

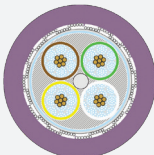
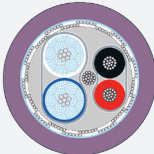
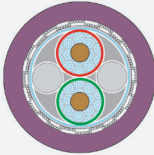
ELECTRICAL & MATERIAL SPECIFICATIONS

CHARACTERISTIC	TECHNICAL SPECIFICATION
Nominal Voltage	30 ÷ 1000 V (UL style)
Impedance	90 Ω to 150 Ω (±10–15% based on standard)
Guaranteed Bandwidth	Up to 500 MHz (PROFINET Cat.6)
Conductor Material	Bare or Tinned Flexible Copper
Insulation	PE, Foam-Skin PE, or PP (Low Dielectric Constant)
Outer Jacket	PVC, PVC TM5 or PUR FRHF
Flame Resistance	UL VW-1 / IEC 60332-1-2
Oil Resistance	According to IEC 60811-2-1 / UL Oil Res I & II
Operating Temperature	-50 °C to +80 °C (PUR), -30 °C to +80 °C (PVC)
Minimum Bending Radius	Down to 7.5 × Outer Diameter (HP versions)

QUALITY CONTROL & TEST PARAMETERS

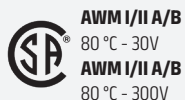
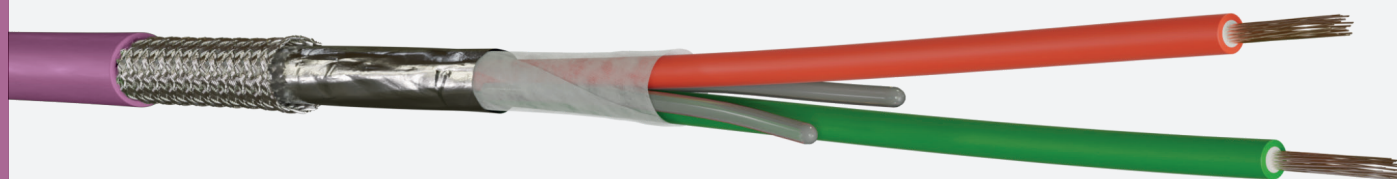
Characteristic Impedance	Time Domain Reflectometry (TDR)
Attenuation	Measured across standard bands (10–500 MHz)
Crosstalk (NEXT/FEXT)	Testing on adjacent pairs (Ethernet)
Linear Capacitance	Measured in pF/m
EMC Shielding	Optical verification and EMI/RFI testing
Conductor Continuity & Integrity	100% Electrical testing
Mechanical Tests	Flexing cycles (≤ 5 million for HP), tensile stress, abrasion

PROTOCOL ANALYSIS AND ELECTRICAL REQUIREMENTS

	PROTOCOL	ORIGIN/ STANDARD	TPOLOGY	IMPEDANCE	TRANSMISSION SPEED	APPLIED FOR
		Bosch / CiA	Bus RS-485	$120 \Omega \pm 10\%$	Up to 1 Mbps	Stable Impedance Dynamic Bending Radius
		Rockwell / ODVA	Linear (with power supply)	$120 \Omega \pm 10\%$	Up to 0.5 Mbps	Data/Power Separation Dual Shielding
		Siemens / PI	RS-485 Linear Bus	$150 \Omega \pm 15\%$	Up to 12 Mbps	AWG 22 Low Attenuation at 12 MHz

APPLICATION EXAMPLES

SECTOR	APPLICATION	PROTOCOL
Automotive	Assembly lines / Interconnected PLCs	PROFIBUS / PROFINET
Machine Tools	Motion Control, encoders	ETHERCAT / CANopen
Packaging	Modular systems / Decentralized I/O	DeviceNet
Advanced Robotics	High-dynamic systems	PROFINET / ETHERCAT (HP)



200.000

DEMI-STATIC



12 x O.D.

MIN. BENDING RADIUS



180 m/min

MAX. SPEED

2.0 m/sec²

ACCELERATION

≤ 50 N / mm²

PULLING FORCE



-

TORSION



-

MAX. HORIZ. TRAVEL

DURABILITY IN MECHANICAL & THERMAL CONDITIONS

ELECTRICAL PROPERTIES

CYCLES

m.u.



MIL

0,2

MIN. BENDING RADIUS

x O.D.

12

MAXIMUM SPEED

m/min

180

MAXIMUM ACCELERATION

m/s²

2,0

PULLING FORCE

N/mm²

≤ 50

TORSION

°/m

-

MAX. HORIZONTAL TRAVEL

m

-

TEMPERATURE

°C

+5 / +80

Test
Voltage4,0 kV x 5 min
acc.to EN 50395 Cl. 10.3Insulation
Resistance≥ 1.0 GΩ x km @ 20 °C
acc.to EN 50395 Cl. 8.1Operating
Voltage

30 ÷ 300 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Balanced Pair Geometry

Ensures high signal stability and interference-free transmission

Low Dielectric Constant Insulation

Improves signal quality and reduces capacitive losses

High-Coverage Shielding

Effective protection against electromagnetic and radio frequency interference

High-Flexibility and High-Purity Conductors

Ensures electrical continuity and long-term reliability

Construction Structure Optimized for Industrial Bus Networks

Maximum compatibility with major communication protocols

Outer Materials Resistant to Oils and Chemical Agents

Increased durability and safety in industrial installations

Compliance with International Standards

Suitability for certified plants and complex production environments

Robust and Flexible Construction

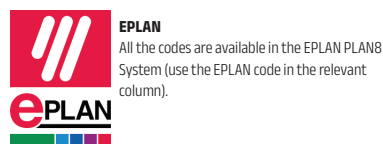
Long service life and reduced machine downtime

Scan the QRcode for a more detailed digital version on our website

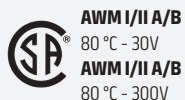
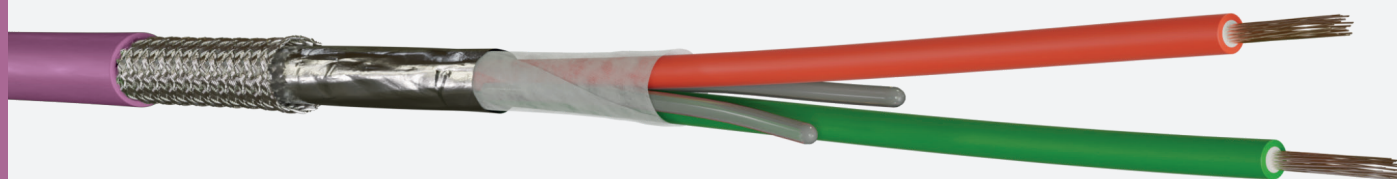
Fieldbus standard	MotionCables code	EPlan Code	Formation	Ø mm	Cu kg/km	Res Ω/km	Cap. nF/km	Op. Tension	Serie's Data Sheet
 120 Ω	BFSC24Q01UR-VI	MC.137042423	(1x4x0.25)	6.5	28	≤ 85.0	44	30 V	
	BFSC24P02UR-VI	MC.137042423	(2x2x0.25)	7.6	35	≤ 85.0	44	30 V	
	BFSC22Q01UR-VI	MC.137042223	(1x4x0.34)	6.7	32	≤ 59.0	42	30 V	
	BFSC21P01UR-VI	MC.137042123	(1x2x0.50)	7.5	42	≤ 39.0	42	30 V	
 120 Ω	BFS22X04UR-VI	MC.138042213	[(1x2x22AWG)+(1x2x24AWG)]	7.0	28	≤ 59.0	40	300 V	
	BFS15X04UR-VI	MC.138041513	[(1x2x18AWG)+(1x2x15AWG)]	11.1	96	≤ 13.7.0	40	300 V	
 150 Ω	BFS24X01UR-VI	MC.141022413	(1x2x24 AWG)	7.8	26	≤ 85,0	30	300 V	
	BFS22X01UR-VI	MC.141022213	(1x2x22 AWG)	8.0	28	≤ 55,0	30	300 V	

ATTENUATION

FREQUENCY	CANOPEN®			DEVICENET®		PROFIBUS®	
	0.50 mm² db/100 m	0.34 mm² db/100m	0.25 mm² db/100m	22 AWG db/100m	18 AWG db/100m	22 AWG db/100m	24 AWG db/100m
MHz	1.0	≤ 1.3	≤ 1.7	≤ 1.9			
	4.0	≤ 2.8	≤ 3.1	≤ 3.9			
	10.0	≤ 3.8	≤ 5.2	≤ 6.5			
	16.0	≤ 4.5	≤ 5.9	≤ 8.4			
	20.0	≤ 6.2	≤ 7.1	≤ 9.5			
	31.25						
	62.5						
	100.0						
KHz	100.0			≤ 0.9	≤ 0.4		
	500.0			≤ 1.6	≤ 0.8		
	1000.0			≤ 2.1	≤ 1.3		
	9,6					≤ 0,22	≤ 0,30
	38,4					≤ 0,36	≤ 0,50
	4					≤ 2.00	≤ 2,40
	16					≤ 4.00	≤ 4,80



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5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



300 m/min

MAX. SPEED



20 m/s²

ACCELERATION



≤ 50 N/mm²

PULLING FORCE



30 °/m

TORSION



30 m

MAX. HORIZ. TRAVEL

DURABILITY IN MECHANICAL & THERMAL CONDITIONS

	m.u.			
CYCLES	MIL	0,2	5	1
MIN. BENDING RADIUS	x O.D.	12	7,5	10
MAXIMUM SPEED	m/min	180	300	180
MAXIMUM ACCELERATION	m/s²	2,0	20	5
PULLING FORCE	N/mm²	≤ 50	≤ 20	≤ 20
TORSION	°/m	-	± 30	± 30
MAX. HORIZONTAL TRAVEL	m	-	15	30
TEMPERATURE	°C	-30 / +80	-5 / +80	-5 / +80

ELECTRICAL PROPERTIES

Test
Voltage4,0 kV x 5 min
acc.to EN 50395 Cl. 10.3Insulation
Resistance≥ 1.0 GΩ x km @ 20 °C
acc.to EN 50395 Cl. 8.1Operating
Voltage

30 ÷ 300 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR



MECHANICAL CRUSH

MAIN ADVANTAGES

Cable Architecture Optimized for High Frequencies	Ensures signal integrity even under dynamic stress conditions
Ultra-Low Parasitic Capacitance Insulation	Cleaner and more precise transmission in data and control lines
High-Efficiency Dual Shielding	Maximum immunity to EMC noise and signal protection in mixed power-data paths
Impedance Control across the Entire Structure	Stable and synchronized communication in industrial networks
Flexible Construction Resistant to Mechanical Stress	Ideal for cable carriers and installations subject to continuous motion
High-Durability Jacketing Materials	Protection against oils, fluids, and aggressive agents with a long service life
Transmission Quality Verified in Production	Guarantee of consistent performance and system reliability over time
Robust and Flexible Construction	Long service life and reduced machine downtime

Scan the QRcode for a more detailed digital version on our website

Fieldbus standard	MotionCables code	Eplan Code	Formation	Ø mm	Cu kg/km	Res Ω/km	Cap. nF/km	Op. Tension V	Serie's Data Sheet
 CANopen 120 Ω	BDESC24Q01UR-VI	MC.237042423	(1x4x0.25)	6.5	28	≤ 85.0	44	30 V	
	BDESC24P02UR-VI	MC.37022423P	(2x2x0.25)	7.6	35	≤ 85.0	44	30 V	
	BDESC22Q01UR-VI	MC.237042223	(1x4x0.34)	6.7	32	≤ 59.0	42	30 V	
	BDS22P01UR-VI	MC.237042223P	(1x2x0.34)	6.80	22	≤ 53.2	40	30 V	
	BDS22Z03UR-VI	MC.237032213	(1x2x0.34+1x0.34)	7.10	30	≤ 53.2	40	30 V	
	BDESC21P01UR-VI	MC.237022123	(1x2x0.50)	7.5	42	≤ 39.0	42	30 V	
 DeviceNet 120 Ω	BDS22X04UR-VI	MC238042223	[(1x2x22AWG)+(1x2x24AWG)]	7.0	28		40	300 V	
	BDS15X04UR-VI	MC238042223	[(1x2x18AWG)+(1x2x15AWG)]	11.1	96		40	300 V	
 PROFIBUS 150 Ω	BDS24X01UR-VI	MC.241022223	(1x2x24 AWG)	7.8	26	≤ 85.0	30	300 V	
	BDS22X01UR-VI	MC.241022223	(1x2x22 AWG)	8.0	28	≤ 55.0	30	300 V	

ATTENUATION

	CANOPEN®			DEVICENET®		PROFIBUS®	
	0.50 mm² db/100 m	0.34 mm² db/100m	0.25 mm² db/100m	22 AWG db/100m	18 AWG db/100m	22 AWG db/100m	24 AWG db/100m
MHz	1.0	≤ 1.3	≤ 1.7	≤ 1.9			
	4.0	≤ 2.8	≤ 3.1	≤ 3.9			
	10.0	≤ 3.8	≤ 5.2	≤ 6.5			
	16.0	≤ 4.5	≤ 5.9	≤ 8.4			
	20.0	≤ 6.2	≤ 7.1	≤ 9.5			
	31.25						
	65.5						
	100.0						
KHz	100.0			≤ 0.9	≤ 0.4		
	500.0			≤ 1.6	≤ 0.8		
	1000.0			≤ 2.1	≤ 1.3		
	9,6					≤ 0,22	≤ 0,30
	38,4					≤ 0,36	≤ 0,50
	4					≤ 2.00	≤ 2,40
	16					≤ 4.00	≤ 4,80

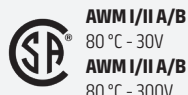
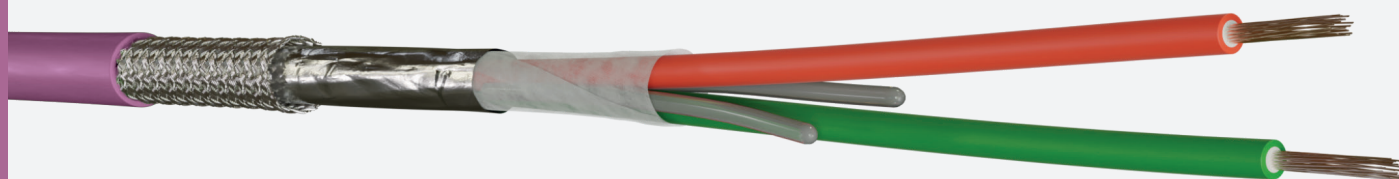


EPLAN
All the codes are available in the EPLAN PLAN8 System (use the EPLAN code in the relevant column).



SPAC CAVI
All the codes are available in the SPAC CAVI system (use MotionCables item code).

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10 million

CYCLES



6,5 x O.D.

MIN. BENDING RADIUS



600 m / min

MAX. SPEED



60 m / s²

ACCELERATION



≤ 50 N / mm²

PULLING FORCE



± 30 ° / m

TORSION



50 m

MAX. HORIZ. TRAVEL

DURABILITY IN MECHANICAL & THERMAL CONDITIONS

ELECTRICAL PROPERTIES

	m.u.				
CYCLES	MIL	0,2	1	5	10
MIN. BENDING RADIUS	x O.D.	12	6,5	7,5	10
MAXIMUM SPEED	m/min	180	600	300	240
MAXIMUM ACCELERATION	m/s²	2,0	50	30	15
PULLING FORCE	N/mm²	≤ 50	≤ 20	≤ 20	≤ 20
TORSION	°/m	-	± 30	± 30	± 30
MAX. HORIZONTAL TRAVEL	m	-	3	15	50
TEMPERATURE	°C	-50 / +80	-40 / +80	-40 / +80	-40 / +80

Test
Voltage4,0 kV x 5 min
acc.to EN 50395 Cl. 10.3Insulation
Resistance≥ 1.0 GΩ x km @ 20 °C
acc.to EN 50395 Cl. 8.1Operating
Voltage

30 ÷ 300 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



COLD RESISTANT



ABRASION RESISTANT



EMC PROTECTED



WATER RESISTANT



UV RESISTANT



MICROBE RESISTANT



OZONE RESISTANT



MUD RESISTANT



HALOGEN FREE

MAIN ADVANTAGES

Perfectly Balanced and Constant Impedance

Total transmission stability even in high-frequency systems

Advanced Insulation with Ultra-Low Dielectric Constant

Signal purity and precision in data propagation

High-Efficiency Multi-Layer Shielding

Complete immunity to EMC interference even in the presence of drives and inverters

Symmetric Structure with Controlled Pitch

Elimination of reflections and internal interference

Outer Materials Resistant to Hydrocarbons, Abrasion, and UV Rays

Reliability even under severe environmental conditions

Construction Optimized for Complex and Robotic Motion

Mechanical stability and electrical integrity in repetitive and rapid cycles

Quality Certified according to Major Industrial Standards

Safety, performance, and compliance in every advanced application

Robust and Flexible Construction

Long service life and reduced machine downtime

Scan the QRcode for a more detailed digital version on our website

Fieldbus standard	MotionCables code	Eplan Code	Formation	Ø mm	Cu kg/km	Res Ω/km	Cap. nF/km	OP. Tension V	Serie's Data Sheet
 120 Ω	BDESC24P01UP-VI	MC.337042433	(1x4x0.25)	6.0	28	≤ 85.0	44	30 V	
	BDESC22P01UP-VI	MC.337042433P	(2x2x0.25)	6.8	35	≤ 85.0	44	30 V	
	BDESC21P01UP-VI	MC.337042233	(1x4x0.34)	7.5	32	≤ 59.0	42	30 V	
	BDS22Z03UP-VI	MC.337032233	(1x2x0.34+1x0.34)	7.10	30	≤ 53.2	40	30 V	
	BDS22P01UP-VI	MC.337042233	(1x2x0.34)	6.80	22	≤ 53.2	40	30 V	
	BDESC17P01UP-VI	MC.337042333	(1x2x0.50)	10.0	42	≤ 39.0	42	30 V	
 120 Ω	BDS22X04UP-VI	MC.338042233	[(1x2x22AWG)+(1x2x24AWG)]	11.60	28		40	300 V	
	BDS15X04UP-VI	MC.338041533	[(1x2x18AWG)+(1x2x15AWG)]	11.1	96		40	300 V	
 150 Ω	BDS24X01UP-VI	MC.341022433	(1x2x24 AWG)	7.8	26	≤ 85,0	30	300 V	
	BDS22X01UP-VI	MC.341022233	(1x2x22 AWG)	8.0	28	≤ 55,0	30	300 V	

ATTENUATION

	CANOPEN®			DEVICENET®		PROFIBUS®	
	0.50 mm² db/100 m	0.34 mm² db/100m	0.25 mm² db/100m	22 AWG db/100m	18 AWG db/100m	22 AWG db/100m	24 AWG db/100m
MHz	1.0	≤ 1.3	≤ 1.7	≤ 1.9			
	4.0	≤ 2.8	≤ 3.1	≤ 3.9			
	10.0	≤ 3.8	≤ 5.2	≤ 6.5			
	16.0	≤ 4.5	≤ 5.9	≤ 8.4			
	20.0	≤ 6.2	≤ 7.1	≤ 9.5			
	31.25						
	65.5						
	100.0						
KHz	100.0			≤ 0.9	≤ 0.4		
	500.0			≤ 1.6	≤ 0.8		
	1000.0			≤ 2.1	≤ 1.3		
	9,6					≤ 0,22	≤ 0,30
	38,4					≤ 0,36	≤ 0,50
	4					≤ 2.00	≤ 2,40
	16					≤ 4.00	≤ 4,80

EPLAN
All the codes are available in the EPLAN PLAN8 System (use the EPLAN code in the relevant column).

SPAC
AUTOMAZIONE
SPAC CAVI
All the codes are available in the SPAC CAVI system (use MotionCables item code).

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MOTIONBUS - ETHERNET

CAT.5E | CAT.6 | CAT.7 — FOR HIGH-SPEED INDUSTRIAL COMMUNICATION

The MOTIONBUS ETHERNET cable family is engineered for high-reliability Industrial Ethernet applications with robust EMC compatibility. Whether the network utilizes PROFINET, EtherNet/IP, Modbus TCP, or EtherCAT, our cables ensure seamless integration, high performance, and full support for PoE / PoE+ / PoE++, even in critical environments or with dynamic motion.

All cables are available in BP (Basic Performance), DP (Dynamic Performance), and HP (High Performance) versions to match the plant's specific mechanical and installation requirements.

PERFORMANCE LEVEL	Suggested Usage Conditions	Insulation	Outer Sheath	Key Features
BASIC PERFORMANCE	Static or Demi-Static installation	PE or Foam-Skin PE	PVC	Flexibility, Oil/Fluid Resistance, Flame Retardant
DYNAMIC PERFORMANCE	Dynamic installation (cable carriers)	PE or Foam-Skin PE	PVC TM5	Designed for Repeated Bending, High performance in Dynamic Environments
HIGH DYNAMIC PERFORMANCE	Severe dynamic, robotics	Polypropylene (PP)	Polyurethane (FRHF PUR)	High flexibility even at low temperatures, Chemical Resistance, Halogen-Free

ELECTRICAL & MATERIAL SPECIFICATIONS

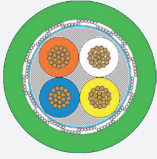
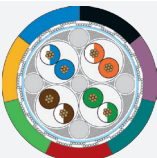
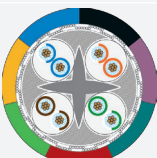
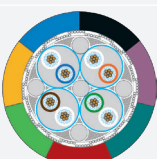
CHARACTERISTIC	TECHNICAL SPECIFICATION
Conductor	Flexible Copper
Insulation	PE or Foam-Skin PE (Low Dielectric Constant)
Twisted Pairs	2 or 4 pairs (Protocol-dependent)
Shielding	Individual pair (TAPE) + overall braid (Cat.6/7)
Outer Jacket	PVC (BP), PVC TM5 (DP), PUR FRHF (HP)
Characteristic Impedance	100 Ω ± 10%
Nominal Voltage	30 ÷ 1000 V (UL CSA)
Operating Temperature	-50 °C to +80 °C (PUR) / -30 °C to +80 °C (PVC)
Flame Resistance	IEC 60332-1-2 / UL VW-1
Oil Resistance	IEC 60811-2-1, Oil Res I & II
Minimum Bending Radius	Down to 7.5 × Outer Diameter (HP)

PoE READY - POWER OVER ETHERNET

All MOTIONBUS ETHERNET cables comply with PoE power requirements as per IEEE 802.3:

Standard	Max Power	Required Cable Type	Minimum Category
PoE (802.3af)	15.4 W	2 active pairs	CAT.5e
PoE+ (802.3at)	25.5 W	2 active pairs	CAT.5e or CAT.6
PoE++ (802.3bt)	Up to 60-100 W	4 active pairs	CAT.6 or CAT.7

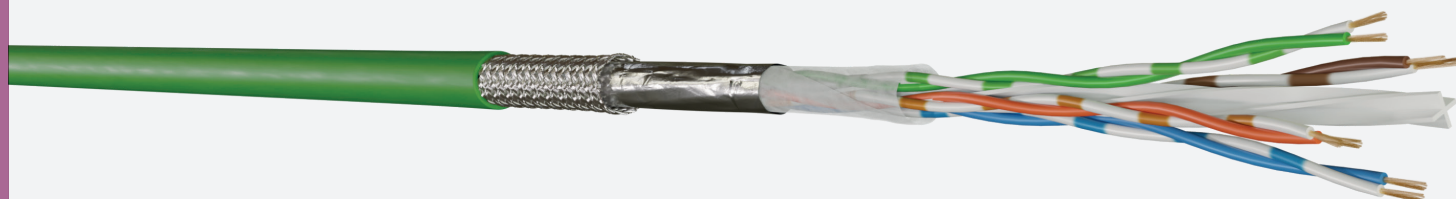
PROTOCOL ANALYSIS AND ELECTRICAL REQUIREMENTS

	PROTOCOL	ORIGIN/STANDARD	IMPEDANCE	SUPPORTED PoE	APPLIED FOR
		PI (Ethernet-based)	100 Ω $\pm$ 15%	100 MHz (Cat.5e) – 500 MHz (Cat.6)	Verified Category (Cat.5e/6) NEXT/FEXT
		Beckhoff / Ether-CAT Tech. Group	100 Ω $\pm$ 10%	100 MHz	Low Parasitic Capacitance High Flexibility
		Beckhoff / Ether-CAT P Tech. Group	100 Ω $\pm$ 10%	100 MHz	Low Parasitic Capacitance High Flexibility
		IEEE	100 Ω $\pm$ 10%	PoE / PoE+	PROFINET Class A/B, Ethernet/IP
		IEEE	100 Ω $\pm$ 10%	PoE / PoE+ / PoE++	PLCs, HMIs, Industrial Switches
		IEEE	100 Ω $\pm$ 10%	PoE / PoE+ / PoE++	EMC-critical systems, High-speed automation

APPLICATION EXAMPLES

SECTOR	APPLICATION	RECOMMENDED CATEGORY
Machine Tools / CNC	Axis control via EtherCAT or Modbus TCP	CAT.6 DP / HP
Factory Automation	PLCs, sensors, I/O modules, PROFINET networks	CAT.5e BP / DP
Robotics / Pick & Place	Switch-to-robot communication	CAT.6 / CAT.7 HP
Automotive	Assembly lines and Quality Control	CAT.6 DP
Food / Pharmaceutical Industry	Washdown areas or areas with chemical agents	CAT.6 / CAT.7 HP (PUR)
Industrial Video Surveillance	PoE++ IP Cameras	CAT.6 / CAT.7 DP / HP

Fieldbus cables, PVC TM5 sheath, Oil Resistant, Dynamic Application



UL 20601
80 °C - 300V
UL 2570
80 °C - 1000V



AWM I/II A/B
80 °C - 300V
AWM I/II A/B
80 °C - 1000V



LABS
Free



5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



300 m / min

MAX. SPEED

20 m / s²

ACCELERATION

≤ 50 N / mm²

PULLING FORCE



± 30 ° / m

TORSION



30 m

MAX. HORIZ. TRAVEL

DURABILITY IN MECHANICAL & THERMAL CONDITIONS

	m.u.			
CYCLES	MIL	0,2	5	1
MIN. BENDING RADIUS	x O.D.	12	7,5	10
MAXIMUM SPEED	m/min	180	300	180
MAXIMUM ACCELERATION	m/s ²	2,0	20	5
PULLING FORCE	N/mm ²	≤ 50	≤ 20	≤ 20
TORSION	°/m	-	± 30	± 30
MAX. HORIZONTAL TRAVEL	m	-	15	30
TEMPERATURE	°C	-30 / +80	-5 / +80	-5 / +80

ELECTRICAL PROPERTIES



Test
Voltage

4,0 kV x 5 min
acc.to EN 50395 Cl. 10.3



Insulation
Resistance

≥ 1.0 GΩ x km @ 20 °C
acc.to EN 50395 Cl. 8.1



Operating
Voltage

30 ÷ 300 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR



MECHANICAL CRUSH

MAIN ADVANTAGES

Balanced Pair Geometry	Ensures high signal stability and interference-free transmission
Low Dielectric Constant Insulation	Improves signal quality and reduces capacitive losses
High-Coverage Shielding	Effective protection against electromagnetic and radio frequency interference
High-Flexibility and High-Purity Conductors	Ensures electrical continuity and long-term reliability
Construction Structure Optimized for Industrial Bus Networks	Maximum compatibility with major communication protocols
Outer Materials Resistant to Oils and Chemical Agents	Increased durability and safety in industrial installations
Compliance with International Standards	Suitability for certified plants and complex production environments
Robust and Flexible Construction	Long service life and reduced machine downtime

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Fieldbus standard	MotionCables code	EPlan Code	Formation	∅ mm	Cu kg/km	Res Ω/km	Cap. nF/km	Op. Tension V	Series Data Sheet
 CAT 5e 100 Ω	DDS24P04UR-*LV	○ MC24008242*	(4 x 2 x 26 AWG)	7.2	75	≤ 87.6	50	300 V	
	DDS26P04UR-*HV	○ MC24008262*	(4 x 2 x 26 AWG)	6.2	54	≤ 140	48	1000 V	
 CAT 6 100 Ω	DFSH26P04UR-*HV	○ MC.26608262*	(4 x 2 x 26 AWG)	7.2	64	≤ 140	47	1000 V	
 CAT 7 100 Ω	DFSHH26P04UR-*LV	○ MC.26808262*	[4 x (2 x 26 AWG)]	6.4	46	≤ 140	47	300 V	
 PROFINET 100 Ω	BDS22Q01UR-VEHV	● MC239042222	(1 x 4 x 22 AWG)	6.5	33	≤ 55.0	51	1000 V	
	BDS22Q01UR-VE	● MC239042222	(1 x 4 x 22 AWG)	6.5	33	≤ 55.0	51	300 V	
 EtherCAT 100 Ω	BDSE22Q01UR-NGHV	● MC.2580422216	(1 x 4 x 22 AWG)	6,7	33	≤ 55.0	51	1000 V	
 EtherCAT 100 Ω	BDSE22Q01UR-NRHH	● MC.2780422216	(1 x 4 x 22 AWG)	6,7	33	≤ 55.0	51	1000 V	

* The cable's outersheath could be in different colour: Green RAL 6018 - Water Blue RAL 5021 - Sky Blue RAL 5015 - Yellow RAL 1021 - Black RAL 9005 - Red RAL 3000 - Violet, RAL 4001.

ATTENUATION

	CAT 5e		CAT 6		CAT 7	PROFINET®	ETHERCAT®
	24 AWG db/100m	26 AWG db/100m	24 AWG db/100m	26 AWG db/100 m	26 AWG db/100m	22 AWG db/100 m	22 AWG db/100 m
1.0	≤ 2,9	≤ 3,2	≤ 2,9	≤ 3,2	≤ 3,0	≤ 2.1	≤ 2.1
4.0	≤ 5,2	≤ 6,0	≤ 5,2	≤ 6,0	≤ 5,6	≤ 4.1	≤ 4.1
10.0	≤ 8,0	≤ 9,5	≤ 8,0	≤ 9,5	≤ 8,8	≤ 6.5	≤ 6.5
16.0	≤ 10,2	12,1	≤ 10,2	12,1	≤ 11,1	≤ 8.3	≤ 8.3
20.0	≤ 11.5	≤ 13,5	≤ 11.5	≤ 13,5	12,4	≤ 9.3	≤ 9.3
MHz 31.25	≤ 14,5	≤ 17,1	≤ 14,5	≤ 17,1	≤ 15,6	≤ 11.7	≤ 11.7
62.5	≤ 21,2	≤ 24,8	≤ 21,2	≤ 24,8	≤ 22,3	≤ 17.0	≤ 17.0
100	≤ 26,9	≤ 32,0	≤ 26,9	≤ 32,0	≤ 28,5	≤ 32.0	≤ 32.0
155			≤ 34,0	≤ 39,1	≤ 36,0		
200			≤ 39,7	≤ 44,8	≤ 46,5		
250			≤ 44,9	≤ 50,7	≤ 67,9		



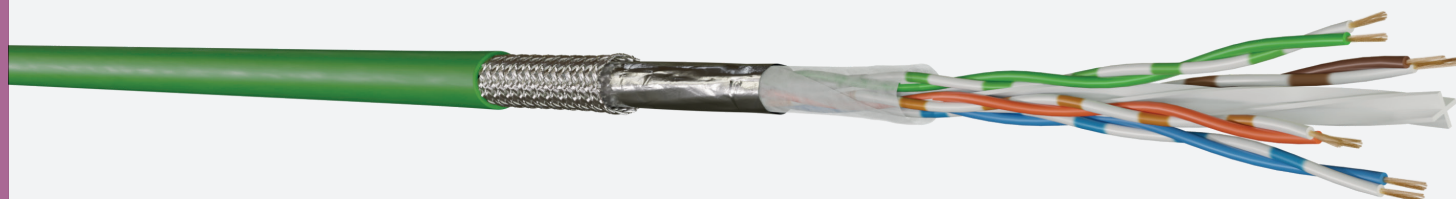
EPLAN
All the codes are available in the EPLAN PLAN8 System (use the EPLAN code in the relevant column).



SPAC CAVI
All the codes are available in the SPAC CAVI system (use MotionCables item code).

The names of trademarks and standards are provided for reference or information purposes only. These trademarks and standards are the exclusive property of their respective owners (see the complete list on the back cover).

Fieldbus cables, PUR sheath, Oil Resistant, High-Dynamic Application, Halogen-Free



UL 20549
80 °C - 300V
UL 21223
80 °C - 1000V
UL 21576



AWM I/II A/B
80 °C - 300V
AWM I/II A/B
80 °C - 1000V



LABS
Free



10 million

CYCLES



6,5 x O.D.

MIN. BENDING RADIUS



600 m / min

MAX. SPEED

60 m / s²

ACCELERATION

≤ 50 N / mm²

PULLING FORCE



30 ° / m

TORSION

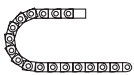
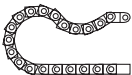
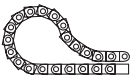


50 m

MAX. HORIZ. TRAVEL

DURABILITY IN MECHANICAL & THERMAL CONDITIONS

ELECTRICAL PROPERTIES

					
	m.u.				
CYCLES	MIL	0,2	1	5	10
MIN. BENDING RADIUS	x O.D.	12	6,5	7,5	10
MAXIMUM SPEED	m/min	180	600	300	240
MAXIMUM ACCELERATION	m/s ²	2,0	50	30	15
PULLING FORCE	N/mm ²	≤ 50	≤ 20	≤ 20	≤ 20
TORSION	°/m	-	± 30	± 30	± 30
MAX. HORIZONTAL TRAVEL	m	-	3	15	50
TEMPERATURE	°C	-50 / +80	-40 / +80	-40 / +80	-40 / +80



Test
Voltage

4,0 kV x 5 min
acc.to EN 50395 Cl. 10.3



Insulation
Resistance

≥ 1.0 GΩ x km @ 20 °C
acc.to EN 50395 Cl. 8.1



Operating
Voltage

30 ÷ 300 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



COLD RESISTANT



ABRASION RESISTANT



EMC PROTECTED



WATER RESISTANT



UV RESISTANT



MICROBE RESISTANT



OZONE RESISTANT



MUD RESISTANT



HALOGEN FREE

MAIN ADVANTAGES

Balanced Pair Geometry	Ensures high signal stability and interference-free transmission
Low Dielectric Constant Insulation	Improves signal quality and reduces capacitive losses
High-Coverage Shielding	Effective protection against electromagnetic and radio frequency interference
High-Flexibility and High-Purity Conductors	Ensures electrical continuity and long-term reliability
Construction Structure Optimized for Industrial Bus Networks	Maximum compatibility with major communication protocols
Outer Materials Resistant to Oils and Chemical Agents	Increased durability and safety in industrial installations
Compliance with International Standards	Suitability for certified plants and complex production environments
Robust and Flexible Construction	Long service life and reduced machine downtime

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Fieldbus standard	MotionCables code	EPlan Code	Formation	Ø mm	Cu kg/km	Res Ω/km	Cap. nF/km	Op. Tension V	Serie's Data Sheet
 CAT 5e 100 Ω	DDS24P04UP-*LV	○ MC34008243*	(4 x 2 x 26 AWG)	7.2	75	≤ 87.6	50	300 V	
	DDS26P04UP-*HV	○ MC34008263*	(4 x 2 x 26 AWG)	6.2	54	≤ 140	48	1000 V	
 CAT 6 100 Ω	DDSH26P04UP-*HV	○ MC.36608263*	(4 x 2 x 26 AWG)	7.2	64	≤ 140	47	1000 V	
 CAT 7 100 Ω	DDSHH26P04UP-*LV	○ MC.36808263*	[4 x (2 x 26 AWG)]	6.4	46	≤ 140	47	300 V	
 PROFINET 100 Ω	BDS22Q01UP-VEHV	● MC339042232	(1 x 4 x 22 AWG)	6.5	33	≤ 55.0	51	1000 V	
	BDS22Q01P-VE	● MC339042232	(1 x 4 x 22 AWG)	6.5	33	≤ 55.0	51	300 V	
 EtherCAT 100 Ω	BDSE22Q01UP-NGHV	● MC.2580422316	(1 x 4 x 22 AWG)	6.5	33	≤ 55.0	51	1000 V	
 EtherCAT 100 Ω	BDSE22Q01UP-NRHH	● MC.2780422316	(1 x 4 x 22 AWG)	4,8	16	≤ 55.0	51	1000 V	

* The cable's outersheath could be in different colour: Green RAL 6018 - Water Blue RAL 5021 - Sky Blue RAL 5015 - Yellow RAL 1021 - Black RAL 9005 - Red RAL 3000 - Violet, RAL 4001.

ATTENUATION

	CAT 5e		CAT 6		CAT 7	PROFINET®	ETHERCAT®
	24 AWG db/100m	26 AWG db/100m	24 AWG db/100m	26 AWG db/100 m	26 AWG db/100m	22 AWG db/100 m	22 AWG db/100 m
1.0	≤ 2,9	≤ 3,2	≤ 2,9	≤ 3,2	≤ 3,0	≤ 2.1	≤ 3.2
4.0	≤ 5,2	≤ 6,0	≤ 5,2	≤ 6,0	≤ 5,6	≤ 4.1	≤ 6.6
10.0	≤ 8,0	≤ 9,5	≤ 8,0	≤ 9,5	≤ 8,8	≤ 6.5	≤ 9.7
16.0	≤ 10,2	12,1	≤ 10,2	12,1	≤ 11,1	≤ 8.3	12.1
20.0	≤ 11.5	≤ 13,5	≤ 11.5	≤ 13,5	12,4	≤ 9.3	≤ 13.7
31.25	≤ 14,5	≤ 17,1	≤ 14,5	≤ 17,1	≤ 15,6	≤ 11.7	≤ 17.2
62.5	≤ 21,2	≤ 24,8	≤ 21,2	≤ 24,8	≤ 22,3	≤ 17.0	≤ 25.2
100	≤ 26,9	≤ 32,0	≤ 26,9	≤ 32,0	≤ 28,5	≤ 32.0	≤ 32.0
155			≤ 34,0	≤ 39,1	≤ 36,0		
200			≤ 39,7	≤ 44,8	≤ 46,5		
250			≤ 44,9	≤ 50,7	≤ 67,9		



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MOTIONCABLES Srl
Via Guido Rossa 8/12
20066 Melzo (MI) - ITALY
T. +39.02.94652630
E. sales@motioncables.com
W. <https://www.motioncables.com>

MOTIONCABLES DEUTSCHLAND
Herr Thomas Pikkemaat
91353 Hausen
M: +49 174 8952504
E. thomas.pikkemaat@motioncables.com