



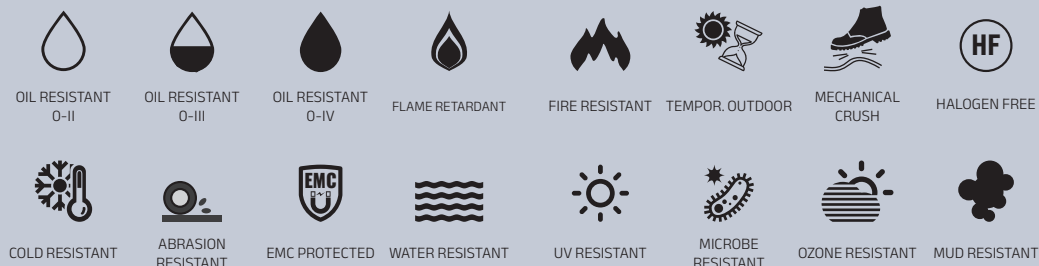
MOTION**UL LISTED**

CONTROL, MULTIWIRE, POWER STANDARD CABLE SOLUTION UL LISTED

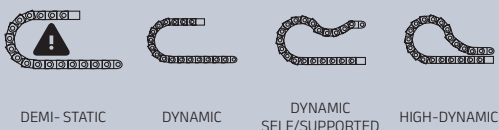
ICONS

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

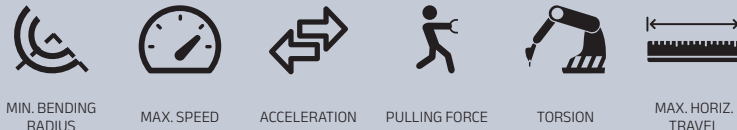
RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



DURABILITY IN MECHANICAL & THERMAL CONDITIONS



BALANCED APPLICATION & UL LISTED 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 **ULMULTIWIRE**

MOTION **ULWIRE**

MOTION **ULPOWER**

MOTION **ULWIRE**

SINGLE WIRE FOR STATIC AND DYNAMIC APPLICATIONS

UL LISTED single-core power cables, suitable for fixed or mobile applications, built according to NFPA 79 and NFPA 70 specifications.

The MOTION **UL WIRE** series includes THHW / TFF (Thermoplastic High Heat Resistant Water), MTW, <HAR> cables.

The cables can operate in cable chain, fixed, and channel.

All cables are oil-resistant, industrial fluids and can work in environments with high humidity.

PERFORMANCE LEVEL	Suggested Usage Conditions	Insulation	Outer Sheath	Key Features
BASIC PERFORMANCE	Static or Demi-Static installation	PVC	PVC LISTED	Flexibility, oil/fluid resistance, flame retardant
DYNAMIC PERFORMANCE	Dynamic installation (cable carriers)	PVC	PVC LISTED	Designed for repeated bending, high performance in dynamic environments

CONSTRUCTION

- ▶ Bare Copper Wire, extra finely stranded acc. to DIN VDE 0295 cl. 6 / IEC 60228 cl. 6
- ▶ Core insulation: PVC.
- ▶ Outer sheath: PVC LISTED (BP, DP). Outer sheath colour: Black RAL 9005.

MAIN PROPERTIES

- ▶ Resistant to: UV radiation, oil, grease, coolants, hydraulic fluids, microbes, numerous alkalis and solvent.
- ▶ UL 1277 / UL 1063 / NEC 336.10 / NFPA 79 (ed. 2012) - UL MTW / TC-ER/CSA C22.2
- ▶ Flame Retardant: UL/CSA FT1, UL VW1.
- ▶ Flame Resistance: FT4/IEEE.
- ▶ The materials used during manufacturing are cadmium-free, contain no silicone and are free from substances harmful to the wetting properties of lacquers.

CABLES TYPES



**BASIC PERFORMANCE
UNSHIELDED**

**PVC
LISTED**

600 V

**-25 °C
+90 °C**

152



**DYNAMIC PERFORMANCE
UNSHIELDED**

**PVC
LISTED**

600 V

**-30 °C
+90 °C**

154

FEATURES

- **THHW/TFF** - Thermoplastic High Heat resistant Water
- **MTW** - Machine Tool Wiring
- **<HAR>**

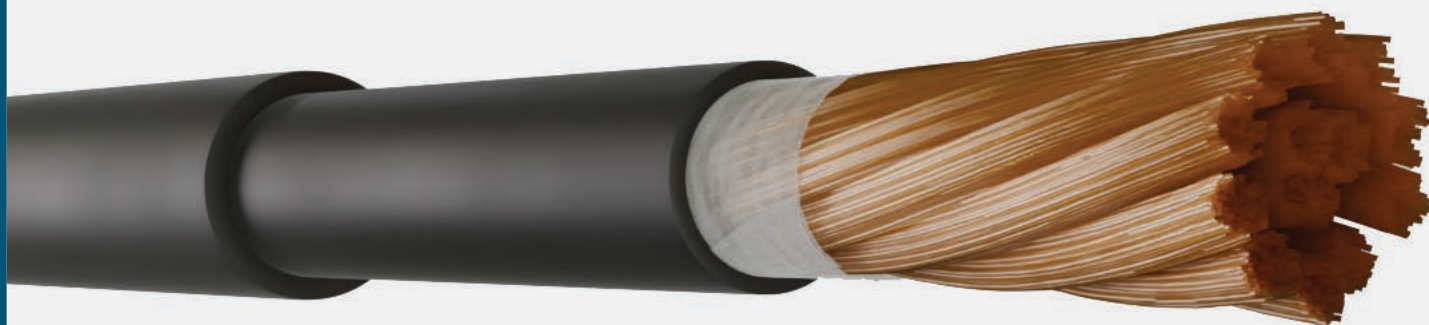


HAZARDOUS AREA CLASSIFICATION:

NEC

Class I Div.2 - Class II Div 2

acc.to: art 501 and art. 502 NFPA 70

MOTION **UL WIRE**Single Wire, PVC sheath, Oil Resistant, Demi-Static Application - **THHW / TFF MTW <HAR>****BP****PVC
LISTED****600 V****-25 °C
+90 °C**UL 1015
90 °C - 600VLABS
Free**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 / +90

**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**Max. Short
Circuit
Temperature**

160 °C (≤ 1s)

**Operating
Voltage**

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS

OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES**Flexible Copper Conductor Class 5**

Excellent flexibility for internal and fixed wiring in machine tools.

PVC Insulation and Jacket

Good chemical and mechanical resistance for industrial use.

Nominal Voltage 600 V (MTW), 1000 V (AWM), 0.6/1.0 kV (IEC)

Wide range of application due to compatibility with international standards.

UL / CSA / HAR / AWM / CE Approvals

Regulatory compliance ensuring safety and reliability.

Conformity to ANSI/NFPA 70, 79; CSA C22.1; UL 508a

Suitability for industrial electrical and automation installations.

Excellent Mechanical and Chemical Resistance

High durability even in harsh environments.

VW-1, FT1, IEC 60332-1-2 Certified

Guaranteed fire safety.

Lower Cost compared to Shielded Versions

Economical solution for applications less sensitive to interference.

MotionCables code	EPlan Code	Formation	AWG Kcmil	Ø	Cu
		mm ²		mm	kg / km
CFNW17X01UR-N	MC.114011725	1 x 1,0	18	2.9	10
CFNW15X01UR-N	MC.114011525	1 x 1,5	16	3.2	14
CFNW13X01UR-N	MC.114011325	1 x 2,5	14	3.6	24
CFNW11X01UR-N	MC.114011125	1 x 4,0	12	4.3	38
CFNW09X01UR-N	MC.114010925	1 x 6	10	4.8	58
CFNW07X01UR-N	MC.114010725	1 x 10	8	6.6	96
CFNW05X01UR-N	MC.114010525	1 x 16	6	8.3	154
CFNW03X01UR-N	MC.114010325	1 x 25	4	9.8	240
CFNW02X01UR-N	MC.114010225	1 x 35	2	11.0	336
CFNWA1X01UR-N	MC.11401A125	1 x 50	1	13.8	480
CFNWA2X01UR-N	MC.11401A225	1 x 70	2/0	15.9	672
CFNWA3X01UR-N	MC.11401A325	1 x 95	3/0	17.4	912
CFNWA4X01UR-N	MC.11401A425	1 x 120	4/0	18.5	1152
CFNWA5X01UR-N	MC.11401A525	1 x 150	250	20.8	1440
CFNWB1X01UR-N	MC.11401B125	1 x 185	350	22.6	1776
CFNWB2X01UR-N	MC.11401B225	1 x 240	450	27.4	2304
CFNWB3X01UR-N	MC.11401B325	1 x 300	550	29.9	2880

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website**



HAZARDOUS AREA CLASSIFICATION:

NEC Class I Div.2 - Class
II Div 2

acc.to: art 501 and art. 502
NFPA 70



EPLAN

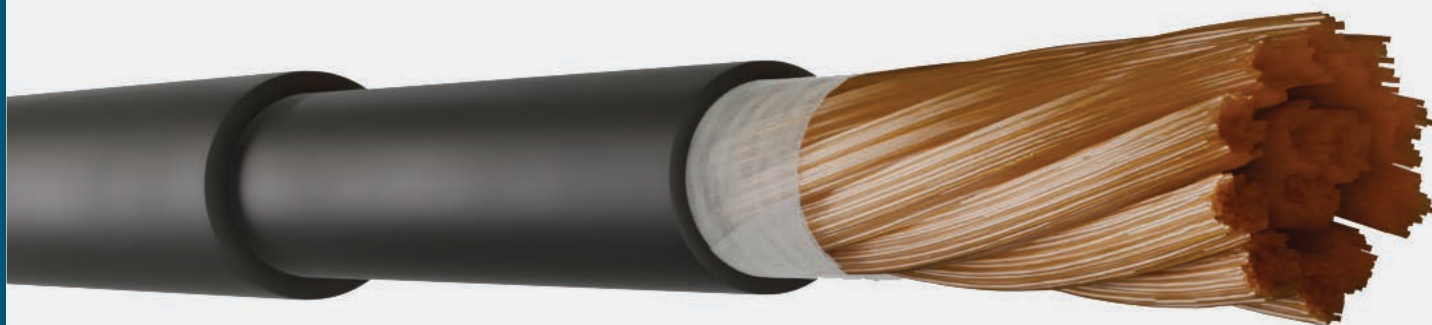
All the codes are available
in the EPLAN PLAN8 System
(use the EPLAN code in the
relevant column).



SPAC CAVI

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

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owners (see the complete list on
the back cover).*



UL 1015
90 °C - 600V



LABS
Free



5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



240 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	240	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 / +90	-5 / +90	-5 / +90

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



Max. Short Circuit Temperature

160 °C (≤ 1s)



Operating Voltage

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Flexible Copper Conductor Class 6

Excellent flexibility for continuous motion cables.

PVC Insulation and Jacket

High mechanical and chemical resistance for dynamic industrial environments.

Nominal Voltage 600 V (MTW), 1000 V (AWM), 0.6/1.0 kV (IEC)

Compatible with moving power and control circuits.

UL / CSA / HAR / AWM / CE Approvals

Wide certification for continuous moving installation in industrial systems.

Conformity to ANSI/NFPA 70, 79; CSA C22.1; UL 508a

Meets US and Canadian regulations for safety and reliability.

Excellent Mechanical and Chemical Resistance

Long service life even under repeated mechanical stress conditions.

VW-1, FT1, IEC 60332-1-2 Certified

Fire protection in dynamic applications.

Competitive Cost for Mobile Applications

Economical solution for mobile wiring not sensitive to EMI.

MotionCables code	EPlan Code	Formation	AWG Kcmil	Ø	Cu
		mm ²		mm	kg / km
CDNW17X01UR-N	MC.214011725	1 x 1,0	18	2.9	10
CDNW15X01UR-N	MC.214011525	1 x 1,5	16	3.2	14
CDNW13X01UR-N	MC.214011325	1 x 2,5	14	3.6	24
CDNW11X01UR-N	MC.214011125	1 x 4,0	12	4.3	38
CDNW09X01UR-N	MC.214010925	1 x 6	10	4.8	58
CDNW07X01UR-N	MC.214010725	1 x 10	8	6.6	96
CDNW05X01UR-N	MC.214010525	1 x 16	6	8.3	154
CDNW03X01UR-N	MC.214010325	1 x 25	4	9.8	240
CDNW02X01UR-N	MC.214010225	1 x 35	2	11.0	336
CDNWA1X01UR-N	MC.21401A125	1 x 50	1	13.8	480
CDNWA2X01UR-N	MC.21401A225	1 x 70	2/0	15.9	672
CDNWA3X01UR-N	MC.21401A325	1 x 95	3/0	17.4	912
CDNWA4X01UR-N	MC.21401A425	1 x 120	4/0	18.5	1152
CDNWA5X01UR-N	MC.21401A525	1 x 150	250	20.8	1440
CDNWB1X01UR-N	MC.21401B125	1 x 185	350	22.6	1776
CDNWB2X01UR-N	MC.21401B225	1 x 240	450	27.4	2304
CDNWB3X01UR-N	MC.21401B325	1 x 300	550	29.9	2880

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HAZARDOUS AREA CLASSIFICATION:

NEC Class I Div.2 - Class
II Div 2

acc.to: art 501 and art. 502
NFPA 70



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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and standards are provided
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and standards are the exclusive
property of their respective
owners (see the complete list on
the back cover).*

MOTION **UL MULTIWIRE**

FOR STATIC AND DYNAMIC APPLICATIONS – SHIELDED AND UNSHIELDED VERSIONS

Unshielded and shielded multicore control cables, UL / CSA LISTED, approved for use in the North American and Canada market.

Suitable for fixed or mobile installation, built according to NFPA 79 and NFPA 70 specifications.

The MOTION **UL MULTIWIRE** series features:

- Tray Cable (Exposed Run)
- MTW, DB (Direct Burial)
- Sun Resistant
- Oil Resistant
- Wet Resistant
- Flame Resistant and Fire Retardant
- High Flexible (on request)

The NEC installation code (NFPA 70 2017) permits the use of TC-ER cables in locations Class I div. 2 and Class II div. 2.

PERFORMANCE LEVEL	Suggested Usage Conditions	Insulation	Outer Sheath	Key Features
BASIC PERFORMANCE	Static or Demi-Static installation	PVC	PVC LISTED	Flexibility, Oil/Fluid Resistance, Flame Retardant
DYNAMIC PERFORMANCE	Dynamic installation (cable carriers)	PVC	PVC LISTED	Designed for Repeated Bending, High performance in Dynamic Environments

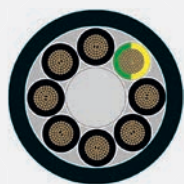
CONSTRUCTION

- ▶ Bare Copper Wire or tinned, extra finely stranded acc. to DIN VDE 0295 cl. 6 / IEC 60228 cl. 6.
- ▶ Core insulation: PVC.
- ▶ Core identification: generally black conductors with white progressive numbers + Green/Yellow.
- ▶ Tape: Fleece Tape.
- ▶ Shield: tinned copper wire braid, approx. optical coverage 85%.
- ▶ Outer sheath: PVC LISTED (BP, DP). Outer sheath colour: Black RAL 9005.

MAIN PROPERTIES

- ▶ Resistant to: UV radiation, oil, grease, coolants, hydraulic fluids, microbes, numerous alkalis and solvent.
- ▶ UL 1277 / UL 1063 / NEC 336.10 / NFPA 79 (ed. 2012) - UL MTW / TC-ER/CSA C22.2.
- ▶ Flame Retardant: UL/CSA FT1, UL VW1.
- ▶ Flame Resistance: FT4/IEEE.
- ▶ The materials used during manufacturing are cadmium-free, contain no silicone and are free from substances harmful to the wetting properties of lacquers.

CABLES TYPES



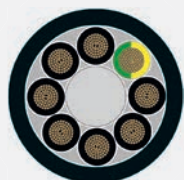
**BASIC PERFORMANCE
UNSHIELDED**

**PVC
LISTED**

600 V

**-25 °C
+90 °C**

158



**DYNAMIC PERFORMANCE
UNSHIELDED**

**PVC
LISTED**

600 V

**-30 °C
+90 °C**

160



**BASIC PERFORMANCE
SHIELDED**

**PVC
LISTED**

600 V

**-25 °C
+90 °C**

162



**DYNAMIC PERFORMANCE
SHIELDED**

**PVC
LISTED**

600 V

**-30 °C
+90 °C**

164

FEATURES

- **TC-ER** Tray - Cable Exposed Run
- **MTW** Machine Tool Wiring
- **DB** Direct Burial
- **SR** Sun Resistant
- **OR** Oil Resistant
- **WR** Wet Resistant
- **FR** Flame Resistant- Fire Retardant
- **FLEX** High Flexible



HAZARDOUS AREA CLASSIFICATION:

NEC

Class I Div.2 - Class II Div 2

acc.to: art 501 and art. 502 NFPA 70

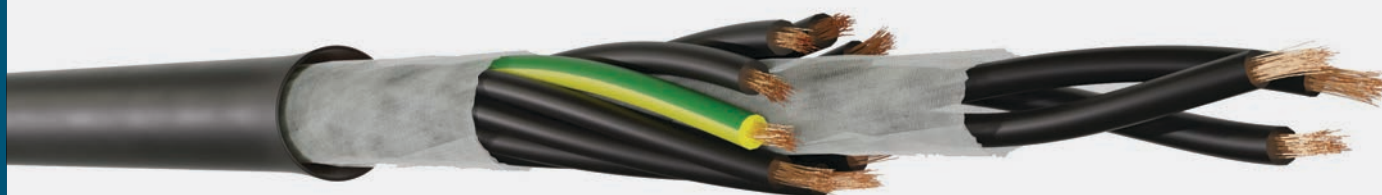
UL LISTED

MOTION **UL MULTIWIRE**

UL/CSA Listed multicore control cables, for demi-static application

UL Listed – TC-ER-HL / CIC / MTW / WTTC / AWM – Direct Burial – Sun & Oil Resistant

BASIC PERFORMANCE

BP**PVC
LISTED****600 V****-25 °C
+90 °C**UL 2587
90 °C – 600VLABS
Free**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 ACCELERATIONm/s²

2,0

PULLING FORCEN/mm²

≤ 50

TORSION

°/m

-

MAX. HORIZONTAL TRAVEL

m

-

TEMPERATURE

°C

+5 / +90

**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**Max. Short
Circuit
Temperature**

160 °C (≤ 1s)

**Operating
Voltage**

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS

OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Approvals: TC-ER-HL / CIC / MTW / WTTC / AWM / Direct Burial / Sun & Oil Resistant	Maximum regulatory coverage for certified US/Canada systems, including in Hazardous Locations.
Compliant with NFPA 70 (NEC), NFPA 79, CSA C22.1, UL 508A	Safety and legality of use for installers, integrators, and machine builders.
TC-ER – Exposed Run Classification	Installable in open wiring between conduits and machinery without the use of metallic tubing.
Suitable for ±150°/m Torsion and Non-Cyclical Motion (up to 5 m)	Compatible with occasional non-continuous movements, for example in semi-mobile machinery.
Operating Temperature: +90°C (dry), +75°C (wet), -40°C (fixed installation)	Stability in industrial environments, tunnels, construction sites, and outdoor control cabinets.
Wide Operating Temperature Range	Reliability even in extreme climatic conditions, indoors or outdoors.
Compatibility with Major Servo Systems	Universal solution for multi-brand applications.
Robust and Flexible Construction	Long service life and reduced machine downtime.

Sez.	MotionCables code	EPlan Code	Formation	AWG	Norm	Ø	Cu
mm ²			mm ²			mm	kg / km
0,50	MFNW21X02UR-G	MC. 112022125	2 x 0.50	21	UL1063 MTW UL 1077 TRAY	7.1	10
19 AWG	MFNW21G03UR-G	MC. 112032125	3 G 0.50	21		7.5	15
	MFNW21G04UR-G	MC. 112042125	4 G 0.50	21		8.0	20
	MFNW21G05UR-G	MC. 112052125	5 G 0.50	21		8.7	24
	MFNW21G07UR-G	MC. 112072125	7 G 0.50	21		9.9	34
	MFNW21G08UR-G	MC. 112082125	8 G 0.50	21		10.9	39
	MFNW21G12UR-G	MC. 112122125	12 G 0.50	21		12.0	58
	MFNW21G18UR-G	MC. 112182125	18 G 0.50	21		13.9	87
	MFNW21G25UR-G	MC. 112252125	25 G 0.50	21		16.6	120
0,75	MFNW19X02UR-G	MC. 112021925	2 x 0.75	19	UL1063 MTW UL 1077 TRAY	7.6	15
21 AWG	MFNW19G03UR-G	MC. 112031925	3 G 0.75	19		8.0	22
	MFNW19G04UR-G	MC. 112041925	4 G 0.75	19		8.6	29
	MFNW19G05UR-G	MC. 112051925	5 G 0.75	19		9.4	36
	MFNW19G07UR-G	MC. 112071925	7 G 0.75	19		10.7	51
	MFNW19G08UR-G	MC. 112081925	8 G 0.75	19		11.9	58
	MFNW19G12UR-G	MC. 112121925	12 G 0.75	19		13.0	87
	MFNW19G18UR-G	MC. 112181925	18 G 0.75	19		15.1	130
	MFNW19G25UR-G	MC. 112251925	25 G 0.75	19		18.1	18
1,0	UFN17X02UCR-N	MC. 112021725	2 x 1.0	18	UL1063 MTW UL 1077 TRAY	8.1	19
18 AWG	UFN17G03UCR-N	MC. 112031725	3 G 1.0	18		8.7	29
	UFN17G04UCR-N	MC. 112041725	4 G 1.0	18		9.4	38
	UFN17G05UCR-N	MC. 112051725	5 G 1.0	18		10.4	48
	UFN17G07UCR-N	MC. 112071725	7 G 1.0	18		12.4	67
	UFN17G08UCR-N	MC. 112081725	8 G 1.0	18		14.2	77
	UFN17G12UCR-N	MC. 112121725	12 G 1.0	18		15.2	115
	UFN17G18UCR-N	MC. 112181725	18 G 1.0	18		18.0	173
	UFN17G25UCR-N	MC. 112251725	25 G 1.0	18		22.0	240
1,5	UFN15X02UCR-N	MC. 112021525	2 x 1.5	16	UL1063 MTW UL 1077 TRAY	8.7	29
16 AWG	UFN15G03UCR-N	MC. 112031525	3 G 1.5	16		9.4	43
	UFN15G04UCR-N	MC. 112041525	4 G 1.5	16		10.1	58
	UFN15G05UCR-N	MC. 112051525	5 G 1.5	16		11.3	72
	UFN15G07UCR-N	MC. 112071525	7 G 1.5	16		14.2	101
	UFN15G08UCR-N	MC. 112081525	8 G 1.5	16		15.4	115
	UFN15G12UCR-N	MC. 112121525	12 G 1.5	16		16.5	173
	UFN15G18UCR-N	MC. 112181525	18 G 1.5	16		19.5	259
	UFN15G25UCR-N	MC. 112251525	25 G 1.5	16		23.8	360
2,5	UFN13X02UCR-N	MC. 112021325	2 x 2.5	14	UL1063 MTW UL 1077 TRAY	9.5	48
14 AWG	UFN13G03UCR-N	MC. 112031325	3 G 2.5	14		10.3	72
	UFN13G04UCR-N	MC. 112041325	4 G 2.5	14		11.1	96
	UFN13G05UCR-N	MC. 112051325	5 G 2.5	14		12.4	120
	UFN13G07UCR-N	MC. 112071325	7 G 2.5	14		15.5	168
	UFN13G08UCR-N	MC. 112081325	8 G 2.5	14		16.8	192
	UFN13G12UCR-N	MC. 112121325	12 G 2.5	14		18.1	288
	UFN13G18UCR-N	MC. 112181325	18 G 2.5	14		21.1	432
	UFN13G25UCR-N	MC. 112251325	25 G 2.5	14		25.1	600

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HAZARDOUS AREA CLASSIFICATION:

NEC Class I Div.2 - Class
II Div 2

acc.to: art 501 and art. 502
NFPA 70



EPLAN

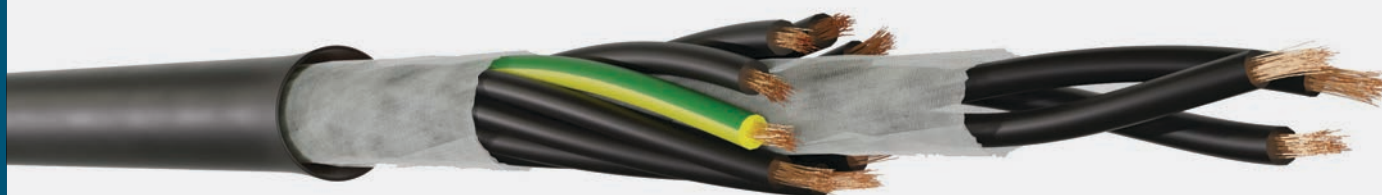
All the codes are available
in the EPLAN PLAN8 System
(use the EPLAN code in the
relevant column).



SPAC CAVI

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

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and standards are provided
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purposes only. These trademarks
and standards are the exclusive
property of their respective
owners (see the complete list on
the back cover).*



UL 2587
90 °C - 600V



LABS
Free



5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



240 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	240	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 / +90	-5 / +90	-5 / +90

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
	Max. Short Circuit Temperature	160 °C (≤ 1s)
	Operating Voltage	600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS

OIL RESISTANT	FLAME RETARDANT	FIRE RESISTANT	WATER RESISTANT	EMC PROTECTED	TEMPOR. OUTDOOR

MAIN ADVANTAGES

Approvals: TC-ER-HL / CIC / MTW / WTTC / AWM / Direct Burial / Sun & Oil Resistant	Total versatility for dynamic systems, wind turbines, control cabinets, and UL/CSA certified machinery.
TC-ER and MTW Classification	Simple and direct wiring between conduits and equipment, including in motion.
WTTC Certification (Wind Turbine Tray Cable)	Guaranteed performance in the typical torsion of wind energy systems. Mechanical reliability.
Operating Temperature: +90°C (dry), +75°C (wet), -5°C (non-cyclical mobile)	Optimized for dynamic environments requiring mechanical robustness and reliability.
Torsion ±150°/m + Non-Cyclical Motion	Excellent for occasional movements up to 5 m in industrial environments.
Oil and UV Resistant PVC LISTED Jacket - Metric Marking	Simple to install, even in contaminated or outdoor environments.
Direct Burial + Sun Res + Oil Res	Direct burial installation without additional conduits. Long outdoor service life.
Class I Div. 1 / Div. 2 for Hazardous Locations	NEC conformity for explosive or high-risk environments (oil, chemical, energy plants).

Sez.	MotionCables code	EPlan Code	Formation	AWG	Norm	Ø	Cu
mm²			mm²			mm	kg / km
0,50	MDNW21X02UCR-N	MC. 212022125	2 x 0.50	21	UL1063 MTW UL 1077 TRAY	7.1	10
21 AWG	MDNW21G03UCR-N	MC. 212032125	3 G 0.50	21		7.5	15
	MDNW21G04UCR-N	MC. 212042125	4 G 0.50	21		8.0	20
	MDNW21G05UCR-N	MC. 212052125	5 G 0.50	21		8.7	24
	MDNW21G07UCR-N	MC. 212072125	7 G 0.50	21		9.9	34
	MDNW21G08UCR-N	MC. 212082125	8 G 0.50	21		10.9	39
	MDNW21G12UCR-N	MC. 212122125	12 G 0.50	21		12.0	58
	MDNW21G18UCR-N	MC. 212182125	18 G 0.50	21		13.9	87
	MDNW21G25UCR-N	MC. 212252125	25 G 0.50	21		16.6	120
0,75	MDNW19X02UCR-N	MC. 212021925	2 x 0.75	19	UL1063 MTW UL 1077 TRAY	7.6	15
19 AWG	MDNW19G03UCR-N	MC. 212031925	3 G 0.75	19		8.0	22
	MDNW19G04UCR-N	MC. 212041925	4 G 0.75	19		8.6	29
	MDNW19G05UCR-N	MC. 212051925	5 G 0.75	19		9.4	36
	MDNW19G07UCR-N	MC. 212071925	7 G 0.75	19		10.7	51
	MDNW19G08UCR-N	MC. 212081925	8 G 0.75	19		11.9	58
	MDNW19G12UCR-N	MC. 212121925	12 G 0.75	19		13.0	87
	MDNW19G18UCR-N	MC. 212181925	18 G 0.75	19		15.1	130
	MDNW19G25UCR-N	MC. 212251925	25 G 0.75	19		18.1	18
1,0	UDN17X02UCR-N	MC. 212021725	2 x 1.0	18	UL1063 MTW UL 1077 TRAY	8.1	19
18 AWG	UDN17G03UCR-N	MC. 212031725	3 G 1.0	18		8.7	29
	UDN17G04UCR-N	MC. 212041725	4 G 1.0	18		9.4	38
	UDN17G05UCR-N	MC. 212051725	5 G 1.0	18		10.4	48
	UDN17G07UCR-N	MC. 212071725	7 G 1.0	18		12.4	67
	UDN17G08UCR-N	MC. 212081725	8 G 1.0	18		14.2	77
	UDN17G12UCR-N	MC. 212121725	12 G 1.0	18		15.2	115
	UDN17G18UCR-N	MC. 212181725	18 G 1.0	18		18.0	173
	UDN17G25UCR-N	MC. 212251725	25 G 1.0	18		22.0	240
1,5	UDN15X02UCR-N	MC. 212021525	2 x 1.5	16	UL1063 MTW UL 1077 TRAY	8.7	29
16 AWG	UDN15G03UCR-N	MC. 212031525	3 G 1.5	16		9.4	43
	UDN15G04UCR-N	MC. 212041525	4 G 1.5	16		10.1	58
	UDN15G05UCR-N	MC. 212051525	5 G 1.5	16		11.3	72
	UDN15G07UCR-N	MC. 212071525	7 G 1.5	16		14.2	101
	UDN15G08UCR-N	MC. 212081525	8 G 1.5	16		15.4	115
	UDN15G12UCR-N	MC. 212121525	12 G 1.5	16		16.5	173
	UDN15G18UCR-N	MC. 212181525	18 G 1.5	16		19.5	259
	UDN15G25UCR-N	MC. 212251525	25 G 1.5	16		23.8	360
2,5	UDN13X02UCR-N	MC. 212021325	2 x 2.5	14	UL1063 MTW UL 1077 TRAY	9.5	48
14 AWG	UDN13G03UCR-N	MC. 212031325	3 G 2.5	14		10.3	72
	UDN13G04UCR-N	MC. 212041325	4 G 2.5	14		11.1	96
	UDN13G05UCR-N	MC. 212051325	5 G 2.5	14		12.4	120
	UDN13G07UCR-N	MC. 212071325	7 G 2.5	14		15.5	168
	UDN13G08UCR-N	MC. 212081325	8 G 2.5	14		16.8	192
	UDN13G12UCR-N	MC. 212121325	12 G 2.5	14		18.1	288
	UDN13G18UCR-N	MC. 212181325	18 G 2.5	14		21.1	432
	UDN13G25UCR-N	MC. 212251325	25 G 2.5	14		25.1	600

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II Div 2

acc.to: art 501 and art. 502
NFPA 70



EPLAN

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SPAC CAVI

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UL/CSA Listed shielded multicore control cables, for demi-static application

UL Listed - TC-ER-HL / CIC / MTW / WTTC / AWM - Direct Burial - Sun & Oil Resistant

UL 2587
90 °C - 600VLABS
Free

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 / +90

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. 8.1Max. Short
Circuit
Temperature

160 °C (≤ 1s)

Operating
Voltage

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Approvals: TC-ER-HL / CIC / MTW / WTTC / AWM / Direct Burial / Sun & Oil Resistant

A single family of certified cables for fixed installations in complex industrial environments.

Compliant with NFPA 70 (NEC), NFPA 79, CSA C22.1, UL 508A

Ensures legal and safe use in industrial electrical systems in the USA and Canada. Perfect for exporting OEMs.

TC-ER (Exposed Run) Classification

Installable outside of conduits without metallic sheaths or ducts. Solution compliant with NEC Art. 336, 392, 501.

EMC Protection: Tinned Copper Braid Shielding (85% Coverage)

High performance in environments disturbed by inverters, motors, drives, and sensitive signals.

Operating Temperature: +90°C (dry), +75°C (wet), -40°C (fixed installation)

Wide thermal range for use in control cabinets, tunnel installations, or non-climatized environments.

Oil-Resistant PVC LISTED Jacket - Black RAL 9005

Resistant to oils, UV, chemical agents, with metric marking to facilitate installation.

Direct Burial Certification

Suitable for direct burial without additional protection: fixed outdoor installations or utility tunnels.

Suitable for Class I Div. 1 (TC-ER-HL)

Usable in high-risk explosion environments, such as oil & gas, refineries, and chemical plants.

Sez.	MotionCables code	EPlan Code	Formation	AWG	Norm	Ø	Cu
mm ²			mm ²			mm	kg / km
0,50	MFSW21X02UR-G	MC.113022125	(2x0.50)	21	UL1063 MTW UL 1077 TRAY	7.9	24
21 AWG	MFSW21G03UR-G	MC.113032125	(3G0.50)	21		8.3	30
	MFSW21G04UR-G	MC.113042125	(4G0.50)	21		8.8	37
	MFSW21G05UR-G	MC.113052125	(5G0.50)	21		9.5	43
	MFSW21G07UR-G	MC.113072125	(7G0.50)	21		10.8	62
	MFSW21G08UR-G	MC.113082125	(8G0.50)	21		11.8	71
	MFSW21G12UR-G	MC.113122125	(12G0.50)	21		12.9	94
	MFSW21G18UR-G	MC.113182125	(18G0.50)	21		14.8	130
	MFSW21G25UR-G	MC.113252125	(25G0.50)	21		18.0	180
0,75	MFSW19X02UR-G	MC.113021925	(2x0.75)	19	UL1063 MTW UL 1077 TRAY	8.4	31
19 AWG	MFSW19G03UR-G	MC.113031925	(3G0.75)	19		8.8	39
	MFSW19G04UR-G	MC.113041925	(4G0.75)	19		9.4	48
	MFSW19G05UR-G	MC.113051925	(5G0.75)	19		10.2	57
	MFSW19G07UR-G	MC.113071925	(7G0.75)	19		11.6	82
	MFSW19G08UR-G	MC.113081925	(8G0.75)	19		12.8	93
	MFSW19G12UR-G	MC.113121925	(12G0.75)	19		13.9	126
	MFSW19G18UR-G	MC.113181925	(18G0.75)	19		16.0	177
	MFSW19G25UR-G	MC.113251925	(25G0.75)	19		19.5	247
1,0	UFS17X02UCR-N	MC.113021725	(2 x 1.0)	18	UL1063 MTW UL 1077 TRAY	8.5	48
18 AWG	UFS17G03UCR-N	MC.113031725	(3 G 1.0)	18		8.9	60
	UFS17G04UCR-N	MC.113041725	(4 G 1.0)	18		9.7	72
	UFS17G05UCR-N	MC.113051725	(5 G 1.0)	18		10.5	87
	UFS17G07UCR-N	MC.113071725	(7 G 1.0)	18		11.4	112
	UFS17G12UCR-N	MC.113081725	(8 G 1.0)	18		13.9	147
	UFS17G18UCR-N	MC.113121725	(12 G 1.0)	18		15.5	196
	UFS17G25UCR-N	MC.113181725	(18 G 1.0v)	18		17.9	264
	UFS17G34UCR-N	MC.113251725	(25 G 1.0)	18		20.3	351
1,5	UFS15G41UCR-N	MC.113021525	(2 x 1.5)	16	UL1063 MTW UL 1077 TRAY	9.2	60
16 AWG	UFS15X02UCR-N	MC.113031525	(3 G 1.5)	16		9.7	77
	UFS15G03UCR-N	MC.113041525	(4 G 1.5)	16		10.5	97
	UFS15G04UCR-N	MC.113051525	(5 G 1.5)	16		11.4	117
	UFS15G05UCR-N	MC.113071525	(7 G 1.5)	16		12.4	171
	UFS15G07UCR-N	MC.113081525	(8 G 1.5)	16		15.4	196
	UFS15G12UCR-N	MC.113121525	(12 G 1.5)	16		16.9	264
	UFS15G18UCR-N	MC.113181525	(18 G 1.5)	16		19.6	360
	UFS15G25UCR-N	MC.113251525	(25 G 1.5)	16		23.4	491
2,5	UFS13G34UCR-N	MC.113021325	(2 x 2.5)	14	UL1063 MTW UL 1077 TRAY	10	85
14 AWG	UFS13G41UCR-N	MC.113031325	(3 G 2.5)	14		10.5	111
	UFS13X02UCR-N	MC.113041325	(4 G 2.5)	14		11.4	141
	UFS13G03UCR-N	MC.113051325	(5 G 2.5)	14		12.5	165
	UFS13G04UCR-N	MC.113071325	(7 G 2.5)	14		14.6	248
	UFS13G05UCR-N	MC.113081325	(8 G 2.5)	14		16.8	282
	UFS13G07UCR-N	MC.113121325	(12 G 2.5)	14		18.5	379
	UFS13G12UCR-N	MC.113181325	(18 G 2.5)	14		22.6	540
	UFS13G18UCR-N	MC.113251325	(25 G 2.5)	14		25.5	710

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II Div 2

acc.to: art 501 and art. 502
NFPA 70



EPLAN

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SPAC CAVI

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UL/CSA Listed shielded multicore control cables, for dynamic application

UL Listed - TC-ER-HL / CIC / MTW / WTTC / AWM - Direct Burial - Sun & Oil Resistant

UL 2587
90 °C - 600VLABS
Free

5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



240 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	240	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 / +90	-5 / +90	-5 / +90

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. 8.1Max. Short
Circuit
Temperature

160 °C (≤ 1s)

Operating
Voltage

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Full Approvals: TC-ER-HL / CIC / MTW / WTTC / AWM / Direct Burial / Sun & Oil Resistant	A single certified cable for cable carriers, wind turbines, dynamic systems, and critical environments.
WTTC Classification (Wind Turbine Tray Cable)	Specific for installations inside wind turbine towers, tolerating torsion and vibrations.
EMC Shielding: Tinned Copper Braid (85% Coverage)	Protection against interference in continuous motion, ideal for signals and power.
Operating Temperature: +90°C (dry), +75°C (wet), -5°C (non-cyclical mobile)	Optimized for dynamic environments where mechanical robustness and reliability are required.
Torsional Resistance ±150°/m	Designed for mobile connections between nacelle and tower, as well as for industrial robotics.
PVC LISTED Outer Jacket Resistant to Oils, UV, Abrasion	Materials suitable for severe industrial environments and outdoor installations.
Direct Burial and Open Wiring Certified	Also suitable for direct burial and in exposed runs without conduits.
Usage in Hazardous Locations - Class I Div. 1 / Div. 2	Compliant with NEC Art. 501 - guaranteed safety in ATEX and similar environments.

Sez.	MotionCables code	EPlan Code	Formation	AWG	Norm	Ø	Cu
mm²			mm²			mm	kg / km
0,50	MDSW21X02UR-G	MC.213022125	(2x0.50)	21	UL1063 MTW UL 1077 TRAY	7.9	24
21 AWG	MDSW21G03UR-G	MC.213032125	(3G0.50)	21		8.3	30
	MDSW21G04UR-G	MC.213042125	(4G0.50)	21		8.8	37
	MDSW21G05UR-G	MC.213052125	(5G0.50)	21		9.5	43
	MDSW21G07UR-G	MC.213072125	(7G0.50)	21		10.8	62
	MDSW21G08UR-G	MC.213082125	(8G0.50)	21		11.8	71
	MDSW21G12UR-G	MC.213122125	(12G0.50)	21		12.9	94
	MDSW21G18UR-G	MC.213182125	(18G0.50)	21		14.8	130
	MDSW21G25UR-G	MC.213252125	(25G0.50)	21		18.0	180
0,75	MDSW19X02UR-G	MC.213021925	(2x0.75)	19	UL1063 MTW UL 1077 TRAY	8.4	31
19 AWG	MDSW19G03UR-G	MC.213031925	(3G0.75)	19		8.8	39
	MDSW19G04UR-G	MC.213041925	(4G0.75)	19		9.4	48
	MDSW19G05UR-G	MC.213051925	(5G0.75)	19		10.2	57
	MDSW19G07UR-G	MC.213071925	(7G0.75)	19		11.6	82
	MDSW19G08UR-G	MC.213081925	(8G0.75)	19		12.8	93
	MDSW19G12UR-G	MC.213121925	(12G0.75)	19		13.9	126
	MDSW19G18UR-G	MC.213181925	(18G0.75)	19		16.0	177
	MDSW19G25UR-G	MC.213251925	(25G0.75)	19		19.5	247
1,0	UDS17X02UCR-N	MC.213021725	(2 x 1.0)	18	UL1063 MTW UL 1077 TRAY	8.5	48
18 AWG	UDS17G03UCR-N	MC.213031725	(3 G 1.0)	18		8.9	60
	UDS17G04UCR-N	MC.213041725	(4 G 1.0)	18		9.7	72
	UDS17G05UCR-N	MC.213051725	(5 G 1.0)	18		10.5	87
	UDS17G07UCR-N	MC.213071725	(7 G 1.0)	18		11.4	112
	UDS17G12UCR-N	MC.213081725	(8 G 1.0)	18		13.9	147
	UDS17G18UCR-N	MC.213121725	(12 G 1.0)	18		15.5	196
	UDS17G25UCR-N	MC.213181725	(18 G 1.0)	18		17.9	264
	UDS17G34UCR-N	MC.213251725	(25 G 1.0)	18		20.3	351
1,5	UDS15G41UCR-N	MC.213021525	(2 x 1.5)	16	UL1063 MTW UL 1077 TRAY	9.2	60
16 AWG	UDS15X02UCR-N	MC.213031525	(3 G 1.5)	16		9.7	77
	UDS15G03UCR-N	MC.213041525	(4 G 1.5)	16		10.5	97
	UDS15G04UCR-N	MC.213051525	(5 G 1.5)	16		11.4	117
	UDS15G05UCR-N	MC.213071525	(7 G 1.5)	16		12.4	171
	UDS15G07UCR-N	MC.213081525	(8 G 1.5)	16		15.4	196
	UDS15G12UCR-N	MC.213121525	(12 G 1.5)	16		16.9	264
	UDS15G18UCR-N	MC.213181525	(18 G 1.5)	16		19.6	360
	UDS15G25UCR-N	MC.213251525	(25 G 1.5)	16		23.4	491
2,5	UDS13G34UCR-N	MC.213021325	(2 x 2.5)	14	UL1063 MTW UL 1077 TRAY	10	85
14 AWG	UDS13G41UCR-N	MC.213031325	(3 G 2.5)	14		10.5	111
	UDS13X02UCR-N	MC.213041325	(4 G 2.5)	14		11.4	141
	UDS13G03UCR-N	MC.213051325	(5 G 2.5)	14		12.5	165
	UDS13G04UCR-N	MC.213071325	(7 G 2.5)	14		14.6	248
	UDS13G05UCR-N	MC.213081325	(8 G 2.5)	14		16.8	282
	UDS13G07UCR-N	MC.213121325	(12 G 2.5)	14		18.5	379
	UDS13G12UCR-N	MC.213181325	(18 G 2.5)	14		22.6	540
	UDS13G18UCR-N	MC.213251325	(25 G 2.5)	14		25.5	710

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HAZARDOUS AREA CLASSIFICATION:

NEC Class I Div.2 - Class
II Div 2

acc.to: art 501 and art. 502
NFPA 70



EPLAN

All the codes are available
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(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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MOTION **UL POWER**

FOR STATIC AND DYNAMIC APPLICATIONS – SHIELDED AND UNSHIELDED VERSIONS

UL LISTED power multicore cables, suitable for fixed or mobile applications, built according to NFPA 79 and NFPA 70 specifications.

The MOTION **UL POWER** series includes:

TC-ER, MTW, DB, SR, OR, WR, FR, FLEX, CIC, WTTC, PR2 cables.

The cables can operate in cable chain, fixed, and trays. All cables are oil-resistant, industrial fluids and can work in environments with high humidity.

The NEC installation code (NFPA 70 2017) permits the use of TC-ER cables in locations Class I div. 2 and Class II div. 2.

PERFORMANCE LEVEL	Suggested Usage Conditions	Insulation	Outer Sheath	Key Features
BASIC PERFORMANCE	Static or Demi-Static installation	PVC	PVC LISTED	Flexibility, Oil/Fluid Resistance, Flame Retardant
DYNAMIC PERFORMANCE	Dynamic installation (cable carriers)	PVC	PVC LISTED	Designed for Repeated Bending, High performance in Dynamic Environments

CONSTRUCTION

- ▶ Bare Copper Wire, finely stranded acc. to DIN VDE 0295 Class 5 / IEC 60228 Class 5, extra finely stranded acc. to DIN VDE 0295 cl. 6 / IEC 60228 cl. 6.
- ▶ Core insulation: PVC.
- ▶ Core identification: generally black conductors with white progressive numbers + Green/Yellow.
- ▶ Shield: tinned copper wire braid, approx. optical coverage 85% .
- ▶ Tape: Polyester tape.
- ▶ Outer sheath: PVC LISTED. Outer sheath colour: Black RAL 9005 .

MAIN PROPERTIES

- ▶ Resistant to: UV radiation, oil, grease, coolants, hydraulic fluids, microbes, numerous alkalis and solvent.
- ▶ UL 1277 / UL 1063 / NEC 336.10 / NFPA 79 (ed. 2012) - UL MTW / TC-ER/CSA C22.2
- ▶ Flame Retardant: UL/CSA FT1, UL VW1
- ▶ Flame Resistance: FT4/IEEE
- ▶ The materials used during manufacturing are cadmium-free, contain no silicone and are free from substances harmful to the wetting properties of lacquers.

CABLES TYPES



**BASIC PERFORMANCE
UNSHIELDED**

**PVC
LISTED**

600 V

**-25 °C
+90 °C**

168



**DYNAMIC PERFORMANCE
UNSHIELDED**

**PVC
LISTED**

600 V

**-30 °C
+90 °C**

170



**BASIC PERFORMANCE
SHIELDED**

**PVC
LISTED**

600 V

**-25 °C
+90 °C**

172



**DYNAMIC PERFORMANCE
SHIELDED**

**PVC
LISTED**

600 V

**-30 °C
+90 °C**

174

FEATURES

- **TC-ER** Tray - Cable Exposed Run
- **MTW** Machine Tool Wiring
- **DB** Direct Burial
- **SR** Sun Resistant
- **OR** Oil Resistant
- **WR** Wet Resistant

- **FR** Flame Resistant- Fire Retardant
- **FLEX** High Flexible
- **CIC** Cable In Conduit
- **WTTC** Wind Turbine Tray Cable
- **PR2** Oil Resistant II



HAZARDOUS AREA CLASSIFICATION:

NEC Class I Div.2 - Class II Div 2
acc.to: art 501 and art. 502 NFPA 70



UL 2587
90 °C - 600V



LABS
Free



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

	m.u.	
CYCLES	MIL	0,2
MIN. BENDING RADIUS	x O.D.	12
MAXIMUM SPEED	m/min	180
MAXIMUM ACCELERATION	m/s ²	2,0
PULLING FORCE	N/mm ²	≤ 50
TORSION	°/m	-
MAX. HORIZONTAL TRAVEL	m	-
TEMPERATURE	°C	+5 / +90



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



Max. Short
Circuit
Temperature

160 °C (≤ 1s)



Operating
Voltage

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Certifications: UL Listed / CSA / CE / TC-ER / CIC / MTW / AWM / WTTC / Direct Burial

Usable in industrial systems in North America, Canada, and the EU.

Reference Standards: ANSI/NFPA 70 (NEC), NFPA 79, CSA C22.1

Perfectly compliant with UL / CSA control cabinets and systems.

TC-ER (Exposed Run) Classification

Allows for "open wiring" between conduit and machine without metallic conduit.

No Shielding

Ideal for power supply and control lines in environments not disturbed by EMC.

PVC LISTED Jacket Resistant to Oil and UV, available in Black

Resistant to industrial agents and external environments.

Thermal Range: +90°C (dry), +75°C (wet), -40°C (fixed installation)

Electrical and mechanical stability over time.

Direct Burial Installation

Suitable for underground laying in civil and industrial systems.

Suitable for Class I, Div. 2 Installations (Hazardous Locations)

Safe for explosive atmospheres classified according to NEC.

MotionCables code	EPlan Code	Formation	AWG Kcmil	Ø	Cu
		mm ²		mm	kg / km
UFN11G03UCR-N	MC.115031125	3 G 4	12	11.3	115
UFN11G04UCR-N	MC.115041125	4 G 4	12	12.4	154
UFN11G05UCR-N	MC.115051125	5 G 4	12	14.7	192
UFN11G07UCR-N	MC.115071125	7 G 4	12	15.7	269
UFN09G03UCR-N	MC.115030925	3 G 6	10	12.5	173
UFN09G04UCR-N	MC.115040925	4 G 6	10	14.5	230
UFN09G05UCR-N	MC.115050925	5 G 6	10	15.9	288
UFN07G03UCR-N	MC.115030725	3 G 10	8	17.0	288
UFN07G04UCR-N	MC.115040725	4 G 10	8	18.6	384
UFN07G05UCR-N	MC.115050725	5 G 10	8	20.6	480
UFN05G03UCR-N	MC.115030525	3 G 16	6	20.7	461
UFN05G04UCR-N	MC.115040525	4 G 16	6	23.8	614
UFN05G05UCR-N	MC.115050525	5 G 16	6	26.3	768
UFN03G04UCR-N	MC.115040325	4 G 25	4	27.3	960
UFN02G04UCR-N	MC.115040225	4 G 35	2	30.2	1344
UFNA1G04UCR-N	MC.11504A125	4 G 50	1	36.7	1920
UFNA2G04UCR-N	MC.11504A225	4 G 70	2/0	41.7	2688
UFNA3G04UCR-N	MC.11504A325	4 G 95	3/0	46.7	3648
UFNA4G04UCR-N	MC.11504A425	4 G 120	4/0	49.3	4608
UFNA5G04UCR-N	MC.11504A525	4 G 150	250	54.9	5760

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UL 2587
90 °C - 600V



LABS
Free



5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



240 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	240	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 / +90	-5 / +90	-5 / +90

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



Max. Short
Circuit
Temperature

160 °C (≤ 1s)



Operating
Voltage

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Certifications: UL Listed / CSA / CE / TC-ER / CIC / MTW / AWM / WTTC / Direct Burial

Full regulatory coverage for dynamic systems.

Reference Standards: NEC (NFPA 70), NFPA 79, CSA C22.1, UL 508A

Suitable for automated machinery with occasional or adjustable movements.

TC-ER / Exposed Run Classification

Can be installed without metallic conduits, even in non-continuous moving parts.

No Shielding

Economical for applications where EMC compatibility is not critical.

Flexible PVC LISTED Jacket Resistant to Oil and UV - Black

Robust and durable in severe industrial conditions.

Operating Temperature: +90°C / -5°C (occasional mobile)

Stable performance in environments with thermal variations.

Direct Burial Approved (UL 1277)

Underground installation without additional protection.

Hazardous Locations - Class I Div. 2

Compliant for installation in explosion-risk environments.

MotionCables code	EPlan Code	Formation	AWG Kcmil	Ø	Cu
		mm²		mm	kg / km
UDN11G03UCR-N	MC.215031125	3 G 4	12	11.7	115
UDN11G04UCR-N	MC.215041125	4 G 4	12	12.7	154
UDN11G05UCR-N	MC.215051125	5 G 4	12	14.9	192
UDN11G07UCR-N	MC.215071125	7 G 4	12	17.8	269
UDN09G03UCR-N	MC.215030925	3 G 6	10	13.9	173
UDN09G04UCR-N	MC.215040925	4 G 6	10	15.0	230
UDN09G05UCR-N	MC.215050925	5 G 6	10	16.8	288
UDN07G03UCR-N	MC.215030725	3 G 10	8	19.3	384
UDN07G04UCR-N	MC.215040725	4 G 10	8	22.8	480
UDN07G05UCR-N	MC.215050725	5 G 10	8	24.9	614
UDN05G03UCR-N	MC.215030525	3 G 16	6	28	768
UDN05G04UCR-N	MC.215040525	4 G 16	6	27.8	960
UDN05G05UCR-N	MC.215050525	5 G 16	6	32.3	1344
UDN03G04UCR-N	MC.215040325	4 G 25	4	36.7	1920
UDN02G04UCR-N	MC.215040225	4 G 35	2	41.7	2688
UDNA1G04UCR-N	MC.21504A125	4 G 50	1	46.7	3648
UDNA2G04UCR-N	MC.21504A225	4 G 70	2/0	49.3	4608
UDNA3G04UCR-N	MC.21504A325	4 G 95	3/0	46.7	3648
UDNA4G04UCR-N	MC.21504A425	4 G 120	4/0	49.3	4608
UDNA5G04UCR-N	MC.21504A525	4 G 150	250	54.9	5760

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acc.to: art 501 and art. 502
NFPA 70



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UL 2587
90 °C - 600V



LABS
Free



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 / +90



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



Max. Short
Circuit
Temperature

160 °C (≤ 1s)



Operating
Voltage

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Full Approvals: UL Listed / CSA / CE / TC-ER / CIC / MTW / AWM / WTTC / Direct Burial

A single cable family compliant with all standards for the USA, Canada, and Europe.

Compliant with: ANSI/NFPA 70 (NEC), NFPA 79, CSA C22.1, UL 508A

Safety and compatibility for industrial systems, machine-side wiring, control cabinets, and conduits.

TC-ER (Tray Cable - Exposed Run) Classification

Installation possible without metallic conduits, simplifying time and cost.

Shielding: Tinned Copper Braid (85% Coverage)

Advanced protection against electromagnetic interference (EMC) from inverters and motors.

PVC LISTED Jacket Resistant to Oils and UV - Black

Resists industrial contaminants and atmospheric agents, also suitable for outdoor installation.

Operating Temperature: +90°C (dry), +75°C (wet), -40°C (fixed installation)

Ideal for systems with high operating temperatures.

Direct Burial Certified

Can be buried directly without conduits.

Suitability for Class I, Division 2 (Hazardous Locations)

Compliant with NEC Art. 501 for installations in explosion-risk areas.

MotionCables code	EPlan Code	Formation	AWG Kcmil	Ø	Cu
		mm ²		mm	kg / km
UFS11G03UCR-N	MC.116031125	(3 G 4)	12	11.9	161
UFS11G04UCR-N	MC.116041125	(4 G 4)	12	13.0	224
UFS11G05UCR-N	MC.116051125	(5 G 4)	12	15.2	265
UFS11G07UCR-N	MC.116071125	(7 G 4)	12	16.5	350
UFS09G03UCR-N	MC.116030925	(3 G 6)	10	13.9	243
UFS09G04UCR-N	MC.116040925	(4 G 6)	10	15.3	311
UFS09G05UCR-N	MC.116050925	(5 G 6)	10	16.7	378
UFS07G04UCR-N	MC.116040725	(4 G 10)	8	22.4	485
UFS07G05UCR-N	MC.116050725	(5 G 10)	8	24.6	601
UFS05G04UCR-N	MC.116040525	(4 G 16)	6	28.1	745
UFS05G05UCR-N	MC.116050525	(5 G 16)	6	31.0	919
UFS03G04UCR-N	MC.116040325	(4 G 25)	4	37.7	1111
UFS02G04UCR-N	MC.116040225	(4 G 35)	2	44.2	1564
UFSA1G04UCR-N	MC.11604A125	(4 G 50)	1	47.7	2205
UFSA2G04UCR-N	MC.11604A225	(4 G 70)	2/0	50.3	3500
UFSA3G04UCR-N	MC.11604A325	(4 G 95)	3/0	55.9	3995
UFSA4G04UCR-N	MC.11604A425	(4 G 120)	4/0	49.3	4970
UFSA5G04UCR-N	MC.11604A525	(4 G 150)	250	54.9	6140

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UL 2587
90 °C - 600V



LABS
Free



5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



240 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	240	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 / +90	-5 / +90	-5 / +90

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
	Max. Short Circuit Temperature	160 °C (≤ 1s)
	Operating Voltage	600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS

OIL RESISTANT	FLAME RETARDANT	FIRE RESISTANT	WATER RESISTANT	EMC PROTECTED	TEMPOR. OUTDOOR

MAIN ADVANTAGES

Approvals: UL Listed / CSA / CE / TC-ER / CIC / MTW / AWM / WTTC / Direct Burial	Suitable for mobile installations in systems with UL/CSA certification.
Applicable Standards: ANSI/NFPA 70 (NEC), NFPA 79, CSA C22.1, UL 508A	Compliant for dynamic machine-side applications.
TC-ER (Exposed Run) Classification	Allows connections without metallic conduits, even in mobile runs.
Shielding: Tinned Copper Braid 85% Coverage	High EMC protection for sensitive signals and control lines.
PVC LISTED Jacket (High Flexibility), Resistant to Oil and UV	Designed to withstand repeated movements and occasional torsion.
Permitted Torsion: ±150°/m - Non-Cyclical Use	Engineered for cable carriers and short-length mobile connections.
Direct Burial Certified	Also usable in permanent underground installation.
Suitability for Class I Div. 2 Environments (Hazardous Locations)	NEC compliance for zones with explosive vapors or gases.

MotionCables code	EPlan Code	Formation	AWG Kcmil	Ø	Cu
		mm ²		mm	kg / km
UDS11G03UCR-N	MC.116031125	(3 G 4)	12	11.9	161
UDS11G04UCR-N	MC.116041125	(4 G 4)	12	13.0	224
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UDS09G03UCR-N	MC.116030925	(3 G 6)	10	13.9	243
UDS09G04UCR-N	MC.116040925	(4 G 6)	10	15.3	311
UDS09G05UCR-N	MC.116050925	(5 G 6)	10	16.7	378
UDS07G04UCR-N	MC.116040725	(4 G 10)	8	22.4	485
UDS07G05UCR-N	MC.116050725	(5 G 10)	8	24.6	601
UDS05G04UCR-N	MC.116040525	(4 G 16)	6	28.1	745
UDS05G05UCR-N	MC.116050525	(5 G 16)	6	31.0	919
UDS03G04UCR-N	MC.116040325	(4 G 25)	4	37.7	1111
UDS02G04UCR-N	MC.116040225	(4 G 35)	2	44.2	1564
UDSA1G04UCR-N	MC.11604A125	(4 G 50)	1	47.7	2205
UDSA2G04UCR-N	MC.11604A225	(4 G 70)	2/0	50.3	3500
UDSA3G04UCR-N	MC.11604A325	(4 G 95)	3/0	55.9	3995
UDSA4G04UCR-N	MC.21504A425	4 G 120	4/0	49.3	4608
UDSA5G04UCR-N	MC.21504A525	4 G 150	250	54.9	5760

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MOTION **UL ETHERNET**

FOR STATIC AND DYNAMIC APPLICATIONS – SHIELDED AND UNSHIELDED VERSIONS

The new MOTION **UL ETHERNET** family is MOTION **CABLES**' response to the demands of global industrial Ethernet communication, where reliability, regulatory compliance, and installation safety are paramount. Developed and certified according to UL 13, UL 444, and CSA C22.2 No. 214 standards, this line includes CE • UL AWM • UL LISTED (PLTC / CMG / CMX) cables suitable for static, dynamic, and highly dynamic applications. All MOTION **UL ETHERNET** cables are tested and approved for SUN RESISTANT, Weatherometer Test for Type CMX Cable (300-hour), and FT4 / VW-1 flame performance, complying with NFPA 70 (NEC) for installations in cable trays and severe industrial environments. The MOTION **UL ETHERNET** range is designed to integrate the following into a single platform:

- International Compliance (CE + UL AWM + UL LISTED)
- Suitability for Outdoor Environments (SUN RESISTANT)
- Weatherometer Test for Type CMX Cable (300-hour)
- Complete UL Safety with successfully passed physical, electrical, and flame tests

Each cable is engineered to ensure stable Ethernet signal transmission (up to 10 Gbit/s), mechanical and chemical resistance, and EMC immunity for Profinet, EtherCAT, EtherCAT P, and Ethernet Cat.6 / Cat.7 protocols.

PERFORMANCE LEVEL	Certifications	UL LISTED References	Installation Type	Primary Applications
BASIC PERFORMANCE	CE • UL AWM • UL LISTED	PLTC / CMG UL 13 • UL 444	Static Installation	Industrial Ethernet backbones, cabinets, PLCs, static systems
DYNAMIC PERFORMANCE	CE • UL AWM • UL LISTED	PLTC / CMG UL 13 • UL 444	Dynamic Installation	Automated machinery, modular lines, light mobile systems
HIGH DYNAMIC PERFORMANCE	CE • UL AWM • UL LISTED	CMX – UL 444	Flexible / Cable Carrier Installation	High-cycle systems, severe dynamic environments

MAIN MOTION **UL ETHERNET** FEATURES

FEATURE	CERTIFIED PRESTATION
Global Certifications	CE • UL AWM • UL LISTED (PLTC / CMG / CMX)
Official UL References	UL 13 • UL 444 • CSA C22.2 No. 214
UV Resistance	SUN RESISTANT – 720 h test passed (QMTT2 Compound)
Weatherometer Test for Type CMX Cable (300-hour)	Passed for outdoor use
Flame test	UL 1685 FT4 / IEEE 1202 (PLTC / CMG) • UL VW-1 / FT1 (CMX)
Cold Bend & Cold Impact	Passed for all UL models (–40 °C)
Crush & Jacket Peel Test	Compliant with UL 444 / UL 13 – High mechanical resistance
Ink Durability & Shrinkback	Tests passed – Stable and permanent marking
Sunlight / UV Exposure	720 h test passed – Suitable for outdoor installations
AC Leakage Through Jacket	Compliant with UL 444 – No electrical leakage detected

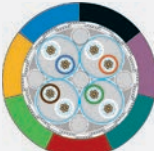
MOTIONUL ETHERNET TECHNICAL ADVANTAGES

DISTINGUISHING FEATURE	CONCRETE ADVANTAGE
Triple Certification (CE • UL AWM • UL LISTED)	The only industrial Ethernet family compliant with EU / US / Canadian standards
Sunlight Resistant / Exposed Run	Suitable for outdoor installations and environments with direct UV exposure
High EMC Protection	Stable data transmission even in electrically noisy environments
Categories Cat.6 / Cat.7	Communication up to 10 Gbit/s – Profinet / EtherCAT protocols
Mechanical and chemical resistance	High durability in robotic systems and dynamic production lines
UL Safety Tested	All flame, impact, press, and bending tests passed
Global Installability	Approved for cable trays, conduits, and NFPA 70 (NEC) environments

APPLICATION EXAMPLES

- Industrial automation and control.
- Industrial Ethernet networks (Profinet, EtherCAT, EtherCAT P).
- Robotics, AGVs, mobile systems, and cable carriers (or: energy chains).
- Installations destined for USA / Canada (UL LISTED PLTC – CMG – CMX).
- Packaging lines, logistics, automatic machinery.
- Industry 4.0 and Smart Factory applications.

PROTOCOL ANALYSIS AND ELECTRICAL REQUIREMENTS

	PROTOCOL	ORIGIN/ STANDARD	IMPEDANCE	SUPPORTED PoE	APPLIED FOR
		PI (Ethernet-based)	100 Ω $\pm$ 15%	PoE / PoE+ / PoE++	Verified Category (Cat.5e/6) NEXT/FEXT
		Beckhoff Ether-CAT Tech. Group	100 Ω $\pm$ 10%	PoE / PoE+ / PoE++	Low Parasitic Capacitance High Flexibility
		Beckhoff Ether-CAT P Tech. Group	100 Ω $\pm$ 10%	PoE / PoE+ / PoE++	Low Parasitic Capacitance High Flexibility
		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



UL 20601
80°C 300V
UL 2570
80°C 1000V



LABS
Free



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

	m.u.	
CYCLES	MIL	0,2
MIN. BENDING RADIUS	x O.D.	12
MAXIMUM SPEED	m/min	180
MAXIMUM ACCELERATION	m/s ²	2,0
PULLING FORCE	N/mm ²	≤ 50
TORSION	°/m	-
MAX. HORIZONTAL TRAVEL	m	-
TEMPERATURE	°C	+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

300 ÷ 1000 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Low-Capacitance Structure	Allows for long connections and signal stability even at high frequencies
High-Performance PUR Jacket	Excellent mechanical, chemical, and abrasion resistance
High-Dynamic Construction	Engineered for cable carriers with long travel distances and high accelerations
Full-Coverage Tinned Copper Shielding	Maximum EMC protection for high-precision servo systems
High Resistance to Oils, Coolants, and Chemical Agents	Suitable for use in harsh industrial environments and wet areas
Wide Operating Temperature Range	Reliability even in extreme climatic conditions, indoors or outdoors
Compatibility with Major Servo Systems	Universal solution for multi-brand applications
Robust and Flexible Construction	Long service life and reduced machine downtime

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Fieldbus standard	MotionCables code	EPlan Code	Formation	Norm	Ø mm	Cu kg/km	Res Ω/km	Cap. nF/km	Op. Tension V	Series's Data Sheet
 CAT 7 100 Ω	DFSHH26P04UR-*LV	MC.14008262*	[4 x (2 x 26 AWG)]	UL 444 CMX	6.3	60	≤ 140	48	300 V	
 PROFI NET 100 Ω	BFSW22Q01UR-VEHV	MC.176042212	[1 x (4 x 0,34)]	UL 13 PLTC & UL 444 CMG	6.5	60	≤ 55.0	51	1000 V	
 Safety Over EtherCAT 100 Ω	BFSEW22Q01UR-NGHV	MC.176042216	[1 x (4 x 0,34)]	UL 13 PLTC & UL 444 CMG	6,7	60	≤ 55.0	51	1000 V	
 EtherCAT 100 Ω	BFSEW22Q01UR-NRHH	MC.176042217	[1 x (4 x 0,34)]	UL 13 PLTC & UL 444 CMG	6,7	60	≤ 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.



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).



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



**LABS
Free**



5 million

CYCLES



7,5 x O.D.

MIN. BENDING RADIUS



240 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

ELECTRICAL PROPERTIES

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

600 V (UL/CSA)

RESISTANCE TO ENVIRONMENTAL AND AGGRESSIVE CHEMICAL THREATS



OIL RESISTANT



FLAME RETARDANT



FIRE RESISTANT



WATER RESISTANT



EMC PROTECTED



TEMPOR. OUTDOOR

MAIN ADVANTAGES

Low-Capacitance Structure	Allows for long connections and signal stability even at high frequencies
High-Performance PUR Jacket	Excellent mechanical, chemical, and abrasion resistance
High-Dynamic Construction	Engineered for cable carriers with long travel distances and high accelerations
Full-Coverage Tinned Copper Shielding	Maximum EMC protection for high-precision servo systems
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Fieldbus standard	MotionCables code	EPlan Code	Formation		Ø mm	Cu kg/km	Res Ω/km	Cap. ηF/km	Op. Tension V	Serie's Data Sheet
 CAT 6 100 Ω	DDSH26P04UP-*HV	MC.34008243*	[4 x (2 x 26 AWG)]	UL 444 CMX	7.2	64	≤ 140	47	1000 V	
 CAT 7 100 Ω	DDSHH26P04UP-*LV	MC.34008263*	[4 x (2 x 26 AWG)]	UL 13 PLTC & UL 444 CMG	6.4	46	≤ 140	47	300 V	
 PROFINET 100 Ω	BDSEW22Q01UP-VEHV	MC.3760422102	[1 x (4 x 0,34)]	UL 13 PLTC & UL 444 CMG	6.5	57	≤ 55.0	51	1000 V	
 EtherCAT 100 Ω	BDSEW22Q01UP-NGHV	MC.3760422116	[1 x (4 x 0,34)]	UL 13 PLTC & UL 444 CMG	6,7	57	≤ 55.0	51	1000 V	
 EtherCAT 100 Ω	BDSEW22Q01UP-NRHV	MC.3760422117	[1 x (4 x 0,34)]	UL 13 PLTC & UL 444 CMG	6,7	57	≤ 55.0	51	1000 V	

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