EVOCABLE®

murrSystems®
Simply Smart Systems

Technical data

mp SD EVOCABLE

mp HD EVOCABLE

mp HD plus EVOCABLE

OUR NEW CABLE SERIES IS CHARACTERISED BY **BEST QUALITY, LONG SERVICE LIFE** AND **OUTSTANDING RELIABILITY** .

mp SD EVOCABLE

mp HD EVOCABLE

mp HD plus EVOCABLE

All three quality levels differ in the stress level and thus in different materials, structures and technical properties. The special focus of our range is on the premium line HDplus.

The HDplus stands for the highest mechanical demands and includes particularly high-quality cables with extremely low abrasion, long service life, small bending radius, high temperature, oil and chemical resistance.

- **Extremely abrasion-resistant and durable**
- **3 different quality levels**
- **For indoor and outdoor use**
- **designed by murrSystems**

Energy chains, cables, assembly and advice are all from one source and coordinated with each other.

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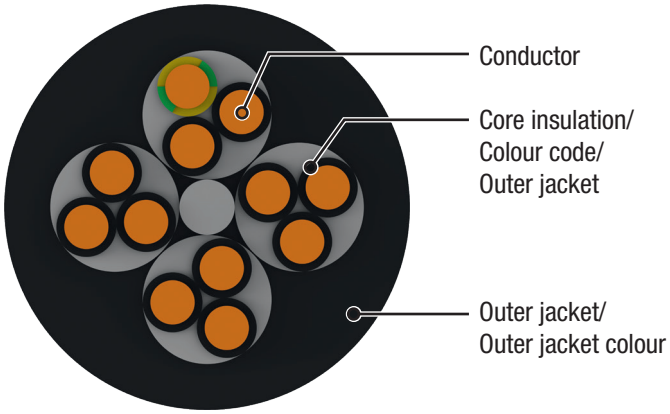
HDplus PVC 131

Unshielded control cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Light oil influence
- Indoor and outdoor applications
- Processing units and machine tools, Storage and retrieval machines, packaging industry, quick handling, indoor cranes

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	< 12 conductors in layer ≥ 12 conductors in bundle design
Colour code	Black with white numbers + green/yellow grounding conductors
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant PVC based mixture
Outer jacket colour	Black RAL9005
Printing	White

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HDplus PVC 131

Unshielded control cables
for highest mechanical performance

Properties and approvals

UV resistance	HIGH
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 2570 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 6.8 x d
	Flexible	min. 5 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	+41 °F to +158 °F (+5 °C to +70 °C)
	Flexible	+23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504)
	Fixed	+5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	16.41 ft/s (5 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HDplus PVC 131

Unshielded control cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85291011	2 x 0,5	5.1	10.0	44.0
85291012	3G0,5	5.4	15.0	54.0
85291013	4G0,5	5.8	20.0	66.0
85291014	5G0,5	6.2	25.0	78.0
85291015	7G0,5	7.5	35.0	104.0
85291016	12G0,5	10.8	60.0	196.0
85291017	18G0,5	13.5	90.0	275.0
85291018	25G0,5	14.7	125.0	398.0
85291019	2 x 0,75	5.7	15.0	58.0
85291020	3G0,75	6.0	22.5	68.0
85291021	4G0,75	6.5	30.0	81.0
85291022	5G0,75	7.0	37.5	95.0
85291023	7G0,75	8.0	52.5	127.0
85291024	12G0,75	12.3	90.0	257.0
85291025	18G0,75	15.8	135.0	365.0
85291026	25G0,75	17.3	187.0	511.0
85291027	2 x 1,0	5.9	20.0	67.0
85291028	3G1,0	6.2	30.0	81.0
85291029	4G1,0	6.7	40.0	97.0
85291030	5G1,0	7.3	50.0	116.0
85291031	7G1,0	8.3	70.0	153.0
85291032	12G1,0	13.3	120.0	309.0
85291033	18G1,0	16.1	180.0	433.0
85291034	25G1,0	18.6	250.0	538.0
85291035	2 x 1,5	6.7	30.0	82.0
85291036	3G1,5	7.1	45.0	101.0
85291037	4G1,5	7.7	60.0	124.0
85291038	5G1,5	8.4	75.0	146.0
85291039*	7G1,5	9.9	105.0	186.0
85291040	12G1,5	15.9	180.0	399.0
85291041	18G1,5	19.6	270.0	599.0
85291042	25G1,5	22.0	375.0	816.0

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HDplus PVC 131

Unshielded control cables
for highest mechanical performance

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85291043	3G2,5	8.6	75.0	144.0
85291044	4G2,5	9.3	100.0	177.0
85291045	5G2,5	10.5	125.0	212.0
85291046*	7G2,5	12.4	175.0	286.0
85291047	12G2,5	19.2	300.0	590.0

*When using the cables with “7 G 1.5 mm² and “7 G 2.5 mm² : bending radius must be ≥ 17.5 x d with travel distance ≥ 16.4 ft (5 m).

If the gliding travel distance is greater than/equal to 16.4 ft (5 m), use a bending radius greater than/equal to 17.5 x d..

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 8.8 x d and temperature +59 °F to +140 °F (+15 °C bis +60 °C)

For further information regarding the life-time, please contact your technical advisor.

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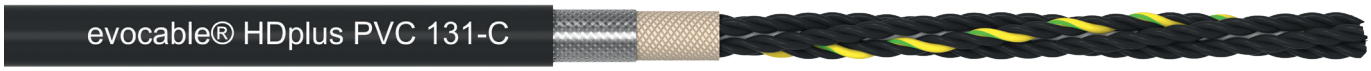
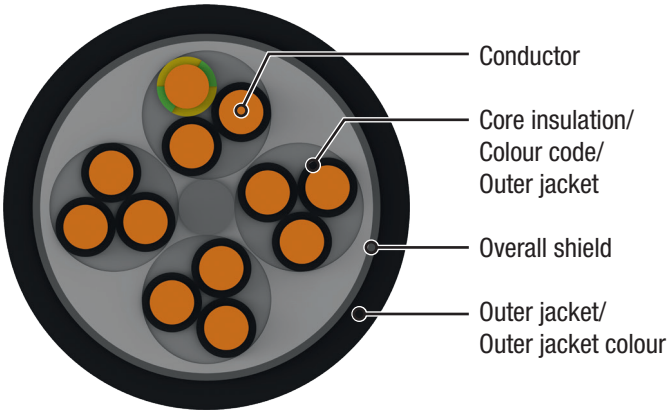
HDplus PVC 131-C

Shielded control cables
for highest mechanical performance



Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Light oil influence
- Indoor and outdoor applications
- Processing units and machine tools, Storage and retrieval machines, packaging industry, quick handling, indoor cranes

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	< 12 conductors in layer ≥ 12 conductors in bundle design
Colour code	Black with white numbers + green/yellow grounding conductors
Inner jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, and flame retardant PVC based mixture
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 85 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, and flame retardant PVC based mixture
Outer jacket colour	Black RAL9005
Printing	White

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HDplus PVC 131-C

Shielded control cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 2570 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 6.8 x d min. 5 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	+41 °F to +158 °F (+5 °C to +70 °C) +23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504) +5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 16.41 ft/s (5 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HDplus PVC 131-C

Shielded control cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85292017	(2x0,5)C	6.5	26.0	68.0
85292018	(3G0,5)C	6.8	32.0	69.0
85292019	(4G0,5)C	7.2	38.0	78.0
85292020	(5G0,5)C	7.6	45.0	89.0
85292021	(7G0,5)C	8.5	58.0	110.0
85292022	(12G0,5)C	13.4	125.0	241.0
85292023	(18G0,5)C	16.2	180.0	333.0
85292024	(25G0,5)C	17.5	187.0	411.0
85292025	(2x0,75)C	7.1	32.0	77.0
85292026	(3G0,75)C	7.4	41.0	88.0
85292027	(4G0,75)C	7.9	50.0	103.0
85292028	(5G0,75)C	8.4	59.0	117.0
85292029	(7G0,75)C	9.8	86.0	158.0
85292030	(12G0,75)C	15.5	156.0	338.0
85292031	(18G0,75)C	18.8	260.0	477.0
85292032	(25G0,75)C	20.9	340.0	645.0
85292033	(2x1,0)C	7.3	39.0	85.0
85292034	(3G1,0)C	7.6	50.0	98.0
85292035	(4G1,0)C	8.1	62.0	115.0
85292036	(5G1,0)C	8.9	74.0	138.0
85292037	(7G1,0)C	10.1	107.0	179.0
85292038	(12G1,0)C	16.2	201.0	389.0
85292039	(18G1,0)C	19.5	292.0	552.0
85292040	(25G1,0)C	22.0	380.0	743.0
85292041	(2x1,5)C	8.1	50.0	108.0
85292042	(3G1,5)C	8.5	66.0	127.0
85292043	(4G1,5)C	9.5	83.0	159.0
85292044	(5G1,5)C	10.5	109.0	190.0
85292045*	(7G1,5)C	11.9	145.0	250.0
85292046	(12G1,5)C	19.1	278.0	542.0
85292047	(18G1,5)C	23.2	399.0	783.0
85292048	(25G1,5)C	25.8	530.0	1029.0

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HDplus PVC 131-C

Shielded control cables
for highest mechanical performance

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85292049	(3G2,5)C	10.5	108.0	192.0
85292050	(4G2,5)C	11.6	136.0	238.0
85292051	(5G2,5)C	12.9	164.0	292.0
85292052*	(7G2,5)C	14.7	220.0	390.0
85292053	(12G2,5)C	22.4	440.0	786.0

*When using the cables with “7 G 1.5 mm² and “7 G 2.5 mm² : bending radius must be ≥ 17.5 x d with travel distance ≥ 16.4 ft (5 m).

If the gliding travel distance is greater than/equal to 16.4 ft (5 m), use a bending radius greater than/equal to 17.5 x d..

Life-time

up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 8.8 x d and temperature +59 °F to +140 °F (+15 °C bis +60 °C)

For further information regarding the life-time, please contact your technical advisor.

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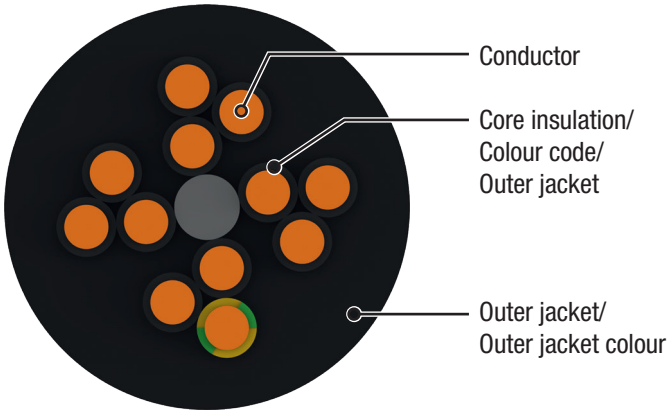
HDplus PUR 132

Unshielded control cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications
- Processing units / machine tools, Storage and retrieval machines, packaging industry, quick handling, refrigerating sector

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	< 12 conductors in layer ≥ 12 conductors in bundle design
Colour code	Black with white numbers + green/yellow grounding conductors
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, halogen-free and flame retardant PUR based mixture
Outer jacket colour	Black RAL 9005
Printing	White

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HDplus PUR 132

Unshielded control cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 21223 176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 6.8 x d min. 5 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	-13 °F to +176 °F (-25 °C to +80 °C) -40 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504) -58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting 32.81 ft/s (10 m/s) Gliding 16.41 ft/s (5 m/s)	
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical information

Nominal voltage	600 V / 1000
Test voltage	4000 V

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HDplus PUR 132

Unshielded control cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85293017	2 x 0.5	5.1	10.0	28.0
85293018	3G0,5	5.5	15.0	34.0
85293019	4G0,5	5.8	20.0	40.0
85293020	5G0,5	6.2	25.0	51.0
85293021	7G0,5	7.1	35.0	69.0
85293022	12G0,5	10.4	60.0	123.0
85293023	18G0,5	12.7	90.0	183.0
85293024	25G0,5	14.7	125.0	264.0
85293026	3G0,75	5.8	22.5	43.0
85293027	4G0,75	6.2	30.0	56.0
85293028	5G0,75	6.8	37.5	69.0
85293029	7G0,75	7.7	52.5	91.0
85293030	12G0,75	11.9	90.0	170.0
85293031	18G0,75	14.5	135.0	299.0
85293032	25G0,75	16.7	187.5	364.0
85293033	2 x 1.0	6.1	20.0	45.0
85293034	3G1,0	6.4	30.0	55.0
85293035	4G1,0	7.0	40.0	69.0
85293036	5G1,0	7.8	50.0	88.0
85293037	7G1,0	8.7	70.0	146.0
85293038	12G1,0	12.8	120.0	212.0
85293039	18G1,0	16.4	180.0	329.0
85293040	25G1,0	18.5	250.0	460.0
85293042	3G1,5	7.1	45.0	75.0
85293043	4G1,5	7.7	60.0	101.0
85293044	5G1,5	8.4	75.0	123.0
85293045*	7G1,5	9.7	105.0	170.0
85293046	12G1,5	14.9	180.0	303.0
85293047	18G1,5	18.7	270.0	404.0
85293048	25G1,5	20.8	375.0	628.0
85293049	3G2,5	8.2	75.0	121.0
85293050	4G2,5	8.9	100.0	160.0

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HDplus PUR 132

Unshielded control cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85293051	5G2,5	9.7	125.0	190.0
85293052*	7G2,5	11.4	175.0	265.0
85293053	12G2,5	17.7	300.0	411.0

**When using the cables with "7 G 1.5 mm² and "7 G 2.5 mm² : bending radius must be ≥ 17.5 x d with travel distance ≥ 16.40 ft (5 m).*

If the gliding travel distance is greater than/equal to 16.40 ft (5 m), use a bending radius greater than/equal to 17.5 x d..

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 8.5 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

For further information regarding the life-time, please contact your technical advisor.

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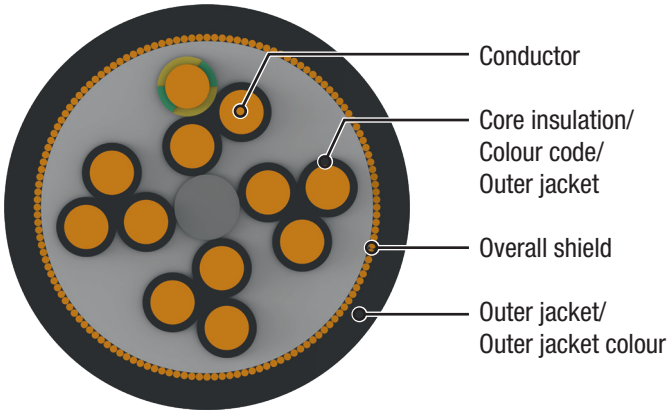
HDplus PUR 132-C

Shielded control cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications
- Processing units and machine tools, Storage and retrieval machines, packaging machines, quick handling, low temperature handling

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	< 12 conductors in layer ≥ 12 conductors in bundle design
Colour code	Black with white numbers + green/yellow grounding conductors
Inner jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, halogen-free and flame retardant PUR based mixture
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 85 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, halogen-free and flame retardant PUR based mixture
Outer jacket colour	Black RAL9005
Printing	White

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HDplus PUR 132-C

Shielded control cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 21223 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 6.8 x d
	Flexible	min. 5 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	-13 °F to +176 °F (-25 °C to +80 °C)
	Flexible	-40 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	16.41 ft/s (5 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HDplus PUR 132-C

Shielded control cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85294019	(4G0,5)C	7.4	37.9	78.0
85294020	(5G0,5)C	7.8	44.0	89.0
85294021	(7G0,5)C	8.7	57.8	120.0
85294022	(12G0,5)C	13.1	110.0	225.0
85294023	(18G0,5)C	15.7	165.0	310.0
85294024	(25G0,5)C	17.6	214.0	411.0
85294026	(3G0,75)C	7.6	39.5	74.0
85294027	(4G0,75)C	8.1	47.2	88.0
85294028	(5G0,75)C	8.7	57.9	108.0
85294029	(7G0,75)C	10.4	77.1	139.0
85294030	(12G0,75)C	15.0	147.0	290.0
85294031	(18G0,75)C	18.2	221.0	388.0
85294032	(25G0,75)C	20.3	385.0	521.0
85294034	(3G1,0)C	8.2	50.4	94.0
85294035	(4G1,0)C	9.0	63.2	116.0
85294036	(5G1,0)C	9.8	74.6	140.0
85294037	(7G1,0)C	11.3	98.4	186.0
85294038	(12G1,0)C	15.9	179.3	363.0
85294039	(18G1,0)C	19.8	271.2	535.0
85294040	(25G1,0)C	22.8	365.0	712.0
85294042	(3G1,5)C	8.7	69.4	116.0
85294043	(4G1,5)C	9.3	86.4	144.0
85294044	(5G1,5)C	10.1	136.0	171.0
85294045 *	(7G1,5)C	11.8	170.9	240.0
85294046	(12G1,5)C	17.6	246.8	460.0
85294047	(18G1,5)C	22.0	381.0	630.0
85294048	(25G1,5)C	24.4	496.0	894.0
85294049	(3G2,5)C	9.8	102.0	161.0
85294050	(4G2,5)C	10.7	134.0	206.0
85294051	(5G2,5)C	11.6	156.0	238.0
85294052 *	(7G2,5)C	13.9	231.4	350.0
85294053	(12G2,5)C	23.3	420.0	745.0

**When using the cables with "7 G 1.5 mm² and "7 G 2.5 mm² : bending radius must be ≥ 17.5 x d with travel distance ≥ 16.40 ft (5 m).*
If the gliding travel distance is greater than/equal to 16.40 ft (5 m), use a bending radius greater than/equal to 17.5 x d..

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HDplus PUR 132-C

Shielded control cables
for highest mechanical performance

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 8.5 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

For further information regarding the life-time, please contact your technical advisor.

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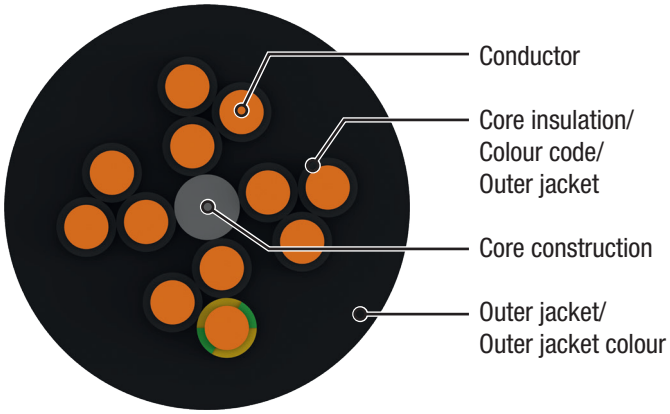
HDplus TPE 133

Unshielded control cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 400 m and more
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- Processing units and machine tools, Storage and retrieval units, packaging industry, semiconductor insertion, quick handling, outdoor cranes, low temperature

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	< 12 conductors in layer ≥ 12 conductors in bundle design
Colour code	Black with white numbers + green/yellow grounding conductors
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant TPE based mixture
Outer jacket colour	Black RAL9005
Printing	White

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 133

Unshielded control cables
for highest mechanical performance

Properties and approvals

	UV resistance	High
	Oil resistance	According to DIN EN 60811-404
	Flame retardant	According to IEC 60332-1-2
	Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
	UL/CSA	AWM Style 21287 176 °F (80 °C) 1000 V
	RoHS-II	According to 2011/65/EU
	CE	According to 2014/35/EU

Dynamic data

	Bending radius	Energy chain linear Flexible Fixed	min. 5 x d min. 4 x d min. 3 x d
	Temperature	Energy chain linear Flexible Fixed	-31 °F to +212 °F (-35 °C to +100 °C) -49 °F to +212 °F (-45 °C to +100 °C) (according to DIN EN 60811-504) -58 °F to +212 °F (-50 °C to +100 °C) (according to DIN EN 50305)
	v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 19.69 ft/s (6 m/s)
	a max.	328.1 ft/s² (100 m/s²)	
	Travel distance	Self-supported travel distances and for gliding applications up to 1,312 ft (400 m)	

Electrical information

	Nominal voltage	600 V / 1000 V
	Test voltage	4000 V

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HDplus TPE 133

Unshielded control cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85295002	3 x 0.25	5.2	7.5	28.0
85295009	2 x 0.34	5.2	6.8	27.0
85295011	4 x 0.34	5.7	13.6	31.0
85295012	5G0.34	6.1	17.0	35.0
85295020	2 x 0.5	5.8	10.0	33.0
85295021	3 x 0.5	6.1	15.0	40.0
85295022	4 x 0.5	6.5	20.0	47.0
85295023	5 x 0.5	6.9	25.0	55.0
85295024	7 x 0.5	7.8	35.0	72.0
85295025	12 x 0.5	11.1	60.0	124.0
85295026	18 x 0.5	13.2	90.0	179.0
85295027	25 x 0.5	14.8	125.0	245.0
85295028	2 x 0.75	6.2	15.0	41.0
85295029	3G0,75	6.5	22.5	50.0
85295030	4G0,75	6.9	30.0	60.0
85295031	5G0,75	7.5	37.5	72.0
85295032	7G0,75	8.4	52.5	94.0
85295033	12G0,75	12.2	90.0	168.0
85295034	18G0,75	15.1	135.0	253.0
85295035	25G0,75	16.9	187.5	344.0
85295036	2 x 1.0	6.6	20.0	50.0
85295037	3G1,0	6.9	30.0	61.0
85295038	4G1,0	7.4	40.0	74.0
85295039	5G1,0	8.0	50.0	89.0
85295040	7G1,0	9.0	70.0	118.0
85295041	12G1,0	13.2	120.0	231.0
85295042	18G1,0	16.4	180.0	317.0
85295043	25G1,0	17.9	250.0	428.0
85295044	2 x 1.5	7.2	30.0	64.0
85295045	3G1,5	7.6	45.0	81.0
85295046	4G1,5	8.1	60.0	99.0
85295047	5G1,5	8.8	75.0	125.0

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HDplus TPE 133

Unshielded control cables
for highest mechanical performance

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85295048*	7G1,5	10.4	105.0	164.0
85295049	12G1,5	15.2	180.0	301.0
85295050	18G1,5	18.8	270.0	446.0
85295051	25G1,5	20.9	375.0	609.0
85295052	3G2,5	8.9	75.0	123.0
85295053	4G2,5	9.6	100.0	153.0
85295054	5G2,5	10.6	125.0	187.0
85295055*	7G2,5	12.4	175.0	255.0
85295056	12G2,5	19.2	300.0	494.0

**When using the cables with "7 G 1.5 mm² and "7 G 2.5 mm² : bending radius must be ≥ 17.5 x d with travel distance ≥ 16.4 ft (5 m).*

If the gliding travel distance is greater than/equal to 16.4 ft (5 m), use a bending radius greater than/equal to 17.5 x d..

Life-time up to 10 million cycles with the following parameters:
Bending factor 7 x d and temperature between -13 °F to + 194 °F (-25 °C bis +90 °C)

For further information regarding the life-time, please contact your technical advisor.

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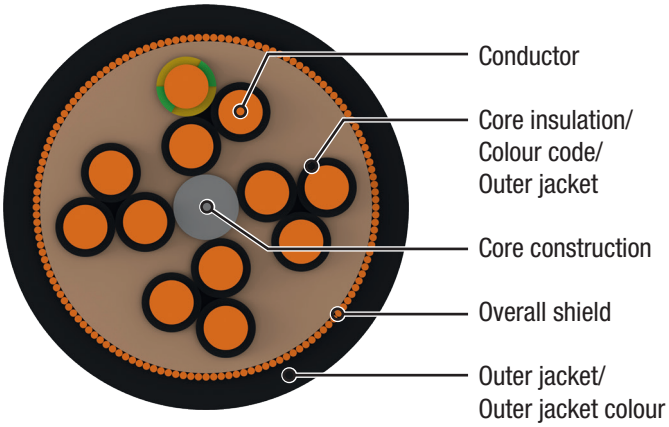
HDplus TPE 133-C

Shielded control cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 400 m and more
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- Processing units and machine tools, Storage and retrieval units, packaging industry, semiconductor insertion, quick handling, outdoor cranes, low temperature

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	< 12 conductors in layer ≥ 12 conductors in bundle design
Colour code	Black with white numbers + green/yellow grounding conductors
Inner jacket	Developed for energy chains, TPE based mixture via pair shielding.
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, and flame retardant TPE based mixture
Outer jacket colour	Black RAL9005
Printing	White

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HDplus TPE 133-C

Shielded control cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21287 +176 °C (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 5 x d min. 4 x d min. 3 x d
Temperature	Energy chain linear Flexible Fixed	-31 °F to +194 °F (-35 °C to +100 °C) -49 °F to +194 °F (-45 °C to +100 °C) (according to DIN EN 60811-504) -58 °F to +194 °F (-50 °C to +100 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1,312 ft (400 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HDplus TPE 133-C

Shielded control cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85296012	(5G0,34)C	8.0	34.0	75.0
85296017	(2 x 0.5)C	7.4	24.0	59.0
85296018	(3G0,5)C	7.7	30.0	68.0
85296019	(4G0,5)C	8.1	37.0	78.0
85296020	(5G0,5)C	8.5	43.0	88.0
85296021	(7G0,5)C	9.8	57.0	109.0
85296022	(12G0,5)C	12.8	114.0	219.0
85296023	(18G0,5)C	15.5	149.0	280.0
85296024	(25G0,5)C	17.2	190.0	356.0
85296025	(2 x 0.75)C	7.8	31.0	70.0
85296026	(3G0,75)C	8.3	40.0	83.5
85296027	(4G0,75)C	8.5	48.0	92.0
85296028	(5G0,75)C	9.1	57.0	110.0
85296029	(7G0,75)C	10.2	78.6	138.0
85296030	(12G0,75)C	15.2	143.0	270.0
85296031	(18G0,75)C	18.4	199.5	381.0
85296032	(25G0,75)C	19.5	284.0	490.0
85296033	(2 x 1.0)C	8.0	37.0	78.0
85296034	(3G1,0)C	8.3	48.0	90.0
85296035	(4G1,0)C	9.0	59.0	109.0
85296036	(5G1,0)C	9.6	72.0	127.0
85296037	(7G1,0)C	10.8	95.0	161.0
85296038	(12G1,0)C	15.7	179.0	310.0
85296039	(18G1,0)C	19.2	249.0	451.0
85296040	(25G1,0)C	21.7	354.0	611.0
85296042	(3G1,5)C	9.4	66.5	120.0
85296043	(4G1,5)C	10.0	82.2	142.0
85296044	(5G1,5)C	10.8	99.5	166.0
85296045*	(7G1,5)C	12.3	133.6	218.0
85296046	(12G1,5)C	18.8	248.5	435.5
85296047	(18G1,5)C	22.2	382.0	614.0
85296048	(25G1,5)C	25.2	500.5	837.0

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HDplus TPE 133-C

Shielded control cables
for highest mechanical performance

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85296049	(3G2,5)C	10.8	100.0	167.0
85296050	(4G2,5)C	11.8	128.0	196.0
85296051	(5G2,5)C	12.7	155.0	244.0
85296052*	(7G2,5)C	15.6	230.0	359.0
85296053	(12G2,5)C	22.3	413.0	670.0
85296054	(18G2,5)C	28.6	592.0	973.0

**When using the cables with "7 G 1.5 mm² and "7 G 2.5 mm² : bending radius must be ≥ 17.5 x d with travel distance ≥ 16.4 ft (5 m).*

If the gliding travel distance is greater than/equal to 16.4 ft (5 m), use a bending radius greater than/equal to 17.5 x d..

Life-time up to 10 million cycles with the following parameters:
Bending factor 7 x d and temperature between -13 °F to + 194 °F (-25 °C bis +90 °C)

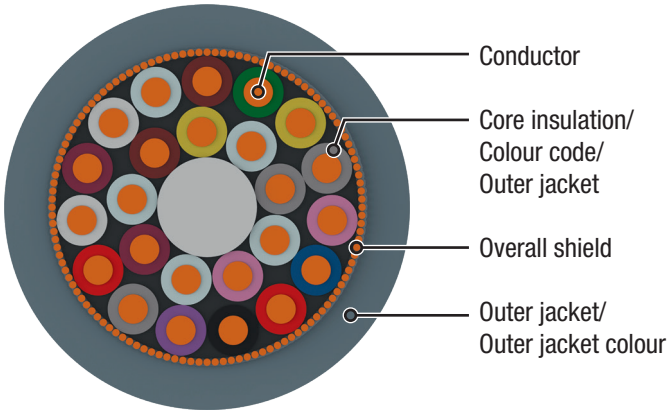
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 211-C

Shielded data cables
for medium mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 164.1 ft (50 m) in gliding applications
- Light oil influence
- Indoor and outdoor applications without direct sun radiation
- For storage and retrieval machines, processing / packaging machines, handling, indoor cranes,

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of bare copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	Conductors are cabled in layers with short pitch lengths.
Colour code	Colour code according to DIN47100
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant PVC based mixture
Outer jacket colour	Window gray RAL7040
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 211-C

Shielded data cables
for medium mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 50363-4-1
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 20233 +176 °F (80 °C) 300 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 10 x d min. 8 x d min. 5 x d
Temperature	Energy chain linear Flexible Fixed	+41 °F to +158 °F (+5 °C to +70 °C) +23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504) +5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	9.84 ft/s (3 m/s) 6.56 ft/s (2 m/s)
a max.	65.6 ft/s² (20 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 164.1 ft (50 m)	

Electrical information

Nominal voltage	300 V
Test voltage	2000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 211-C

Shielded data cables
for medium mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85151001	(2 x 0.14)C	4.3	13	28
85151002	(3 x 0.14)C	4.5	16	26
85151003	(4 x 0.14)C	4.8	18	33
85151004	(5 x 0.14)C	5.2	20	37
85151005	(7 x 0.14)C	5.8	25	46
85151006	(8 x 0.14)C	6.2	29	57
85151007	(10 x 0.14)C	6.8	34	63
85151008	(14 x 0.14)C	6.9	42	68
85151009	(18 x 0.14)C	7.75	48	80
85151010	(24 x 0.14)C	8.75	60	101
85151011	(2 x 0.25)C	4.6	18	30
85151012	(3 x 0.25)C	4.8	21	33
85151013	(4 x 0.25)C	5.2	24	38
85151014	(5 x 0.25)C	5.5	27	44
85151015	(7 x 0.25)C	6.2	35	59
85151016	(8 x 0.25)C	6.7	40	66
85151017	(10 x 0.25)C	7.65	44	83
85151018	(14 x 0.25)C	7.75	57	89
85151019	(18 x 0.25)C	8.75	71	120
85151020	(24 x 0.25)C	9.65	92	138
85151021	(2 x 0.34)C	4.8	19	36
85151022	(3 x 0.34)C	5.4	24	39
85151023	(4 x 0.34)C	5.6	28	49
85151024	(5 x 0.34)C	6	32	53
85151025	(7 x 0.34)C	6.9	43	71
85151026	(8 x 0.34)C	7.45	49	86
85151027	(10 x 0.34)C	8.35	55	98
85151028	(14 x 0.34)C	8.45	71	107
85151029	(18 x 0.34)C	9.45	87	132
85151030	(24 x 0.34)C	11.1	115	174

Life-time up to 10 million cycles with the following parameters: Travel distance 10 m, bending radius 12 x d and temperature +59 °F to +140 °F (+15 °C bis +60 °C)

For further information regarding the life-time, please contact your technical advisor.

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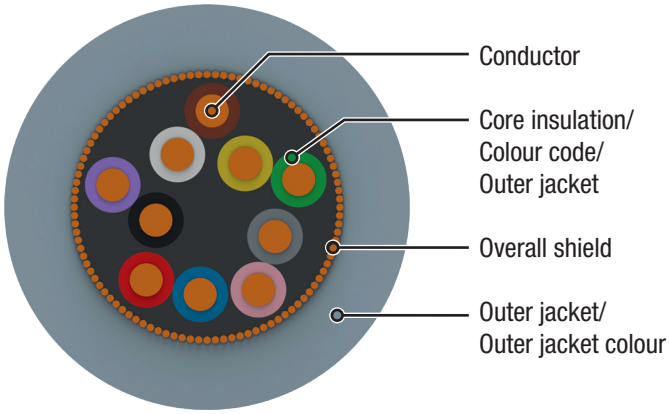
SD PVC 211-C-TP

Shielded data cables
for medium mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Light oil influence
- Indoor and outdoor applications without direct sun radiation
- For storage and retrieval machines, processing / packaging machines, handling, indoor cranes

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of bare copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	2 cores each twisted in pairs with short pitch lengths, core pairs also twisted with short pitch lengths.
Colour code	Colour code according to DIN47100
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant PVC based mixture
Outer jacket colour	Window gray RAL7040
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 211-C-TP

Shielded data cables
for medium mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 50363-4-1
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 2464 +176 °F (80 °C) 300 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 7.5 x d min. 6 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	+41 °F to +158 °F (+5 °C to +70 °C) +23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504) +5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	16.41 ft/s (5 m/s) 9.84 ft/s (3 m/s)
a max.	164.1 ft/s² (50 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical information

Nominal voltage	300 V
Test voltage	2000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 211-C-TP

Shielded data cables
for medium mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85151108	(2 x (2 x 0.25))C	5.15	28	40
85151109	(3 x (2 x 0.25))C	6.7	37	60
85151110	(4 x (2 x 0.25))C	7.65	44	74
85151111	(5 x (2 x 0.25))C	8.15	51	80
85151112	(6 x (2 x 0.25))C	9.25	58	101
85151113	(8 x (2 x 0.25))C	10.25	75	129
85151114	(10 x (2 x 0.25))C	11.7	93	158
85151115	(14 x (2 x 0.25))C	12.3	109	190
85151116	(2 x (2 x 0.34))C	6.2	26.6	58
85151117	(3 x (2 x 0.34))C	7.75	37.2	77
85151121	(7 x (2 x 0.34))C	11.5	75.4	161
85151122	(8 x (2 x 0.34))C	11.8	110.4	174
85151123	(10 x (2 x 0.34))C	13.9	118	220
85151125	(2 x 0.5)C	5.4	23	41
85151126	(2 x (2 x 0.5))C	6.4	44	60
85151127	(3 x (2 x 0.5))C	8.25	57	89
85151128	(4 x (2 x 0.5))C	8.85	68	104
85151129	(5 x (2 x 0.5))C	10.25	80	130
85151130	(6 x (2 x 0.5))C	11.3	99	165
85151131	(8 x (2 x 0.5))C	12.8	124	200
85151132	(10 x (2 x 0.5))C	14.9	175	256
85151133	(14 x (2 x 0.5))C	15.4	187	305

Life-time up to 10 million cycles with the following parameters: Travel distance 10 m, bending radius 9.5 x d and temperature +59 °F to +140 °F (+15 °C bis +60 °C)

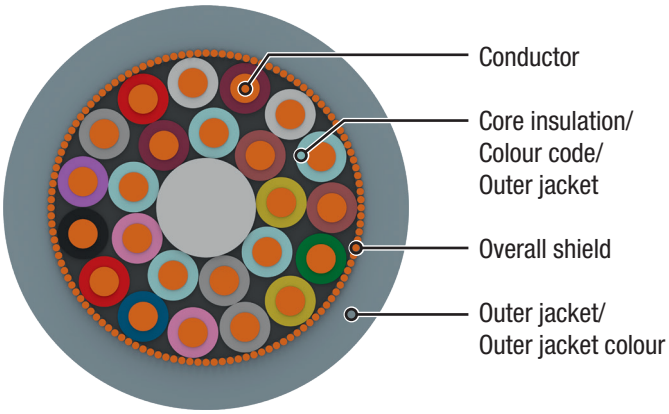
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 222-C

Shielded data cables
for high mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 164.1 ft (50 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications with average sun radiation
- Processing units / machine tools, Storage and retrieval machines, packaging machines, Quick handling, refrigerating sector

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of bare copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	Conductors are cabled in layers with short pitch lengths.
Colour code	Colour code according to DIN47100
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant PUR based mixture
Outer jacket colour	Window gray RAL7040
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 222-C

Shielded data cables
for high mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 20233 +176 °F (80 °C) 300 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 10 x d
	Flexible	min. 8 x d
	Fixed	min. 5 x d
Temperature	Energy chain linear	-13 °F to +176 °F (-25 °C to +80 °C)
	Flexible	-40 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting	9.84 ft/s (3 m/s)
	Gliding	6.56 ft/s (2 m/s)
a max.	65.6 ft/s² (20 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 164.1 ft (50 m)	

Electrical information

Nominal voltage	300 V
Test voltage	2000 V

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HD PUR 222-C

Shielded data cables
for high mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85203001	(2 x 0.14)C	4.3	10.6	27
85203002	(3 x 0.14)C	4.5	16	28
85203003	(4 x 0.14)C	4.7	18	32
85203004	(5 x 0.14)C	5.1	20	37
85203005	(7 x 0.14)C	5.8	25	46
85203008	(14 x 0.14)C	6.9	42	65
85203009	(18 x 0.14)C	7.55	48	82
85203010	(24 x 0.14)C	8.75	60	101
85203011	(2 x 0.25)C	4.6	12.7	30
85203012	(3 x 0.25)C	4.8	21	34
85203013	(4 x 0.25)C	5.1	24	38
85203014	(5 x 0.25)C	5.6	27	46
85203015	(7 x 0.25)C	6.4	35	58
85203016	(8 x 0.25)C	6.7	40	66
85203018	(14 x 0.25)C	7.85	57	89
85203019	(18 x 0.25)C	8.75	71	117
85203020	(24 x 0.25)C	9.7	92	138
85203021	(2 x 0.34)C	5.2	19.7	36
85203022	(3 x 0.34)C	5.4	26	39
85203023	(4 x 0.34)C	5.6	28	49
85203024	(5 x 0.34)C	6	32	53
85203025	(7 x 0.34)C	6.9	43	71
85203027	(10 x 0.34)C	8.35	55	98
85203028	(14 x 0.34)C	8.45	71	107
85203029	(18 x 0.34)C	9.45	87	132
85203030	(24 x 0.34)C	11.1	115	174
85203031	(2 x 0.5)C	5.1	24.5	41

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 12 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

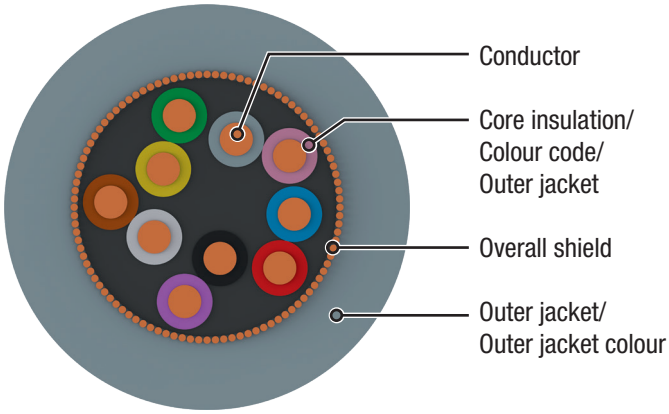
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 222-C-TP

Shielded data cables
for high mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications with average sun radiation
- Processing units and machine tools, Storage and retrieval machines, packaging machines, quick handling, low temperature handling

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of bare copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	2 cores each twisted in pairs with short pitch lengths, core pairs also twisted with short pitch lengths.
Colour code	Colour code according to DIN47100
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Oil resistant, highly abrasion resistant, low adhesion and flame retardant mixture on the basis of PUR developed for energy chains.
Outer jacket colour	Window gray RAL7040
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 222-C-TP

Shielded data cables
for high mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 20233 +176 °F (80 °C) 300 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 7.5 x d
	Flexible	min. 6 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	-13 °F to (-25 °C to +80 °C)
	Flexible	-40 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting 16.41 ft/s (5 m/s) Gliding 9.84 ft/s (3 m/s)	
a max.	164.1 ft/s² (50 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical information

Nominal voltage	300 V
Test voltage	2000 V

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HD PUR 222-C-TP

Shielded data cables
for high mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85203130	(1 x (2 x 0.14))C	4.3	15	55
85203131	(2 x (2 x 0.14))C	4.7	22	95
85203032	(3 x (2 x 0.14))C	6.1	32	118
85203033	(4 x (2 x 0.14))C	6.5	35	130
85203034	(5 x (2 x 0.14))C	7.1	38	169
85203035	(6 x (2 x 0.14))C	7.65	42	203
85203036	(8 x (2 x 0.14))C	8.95	60	210
85203037	(10 x (2 x 0.14))C	9.85	74	220
85203038	(14 x (2 x 0.14))C	10.2	93	280
85203040	(2 x (2 x 0.25))C	5.1	28	40
85203041	(3 x (2 x 0.25))C	6.9	37	60
85203042	(4 x (2 x 0.25))C	7.85	44	74
85203043	(5 x (2 x 0.25))C	8.45	51	80
85203044	(6 x (2 x 0.25))C	9.55	58	101
85203045	(8 x (2 x 0.25))C	10.5	75	129
85203046	(10 x (2 x 0.25))C	11.8	93	158
85203047	(14 x (2 x 0.25))C	12.1	109	190
85203049	(2 x (2 x 0.34))C	5.6	31	46
85203050	(3 x (2 x 0.34))C	7.45	44	72
85203051	(4 x (2 x 0.34))C	8.05	63	85
85203052	(5 x (2 x 0.34))C	9	80	106
85203053	(6 x (2 x 0.34))C	9.65	88	119
85203054	(8 x (2 x 0.34))C	10.9	110.4	149
85203055	(10 x (2 x 0.34))C	12.6	138	189
85203056	(14 x (2 x 0.34))C	13.1	172	270
85203058	(2 x (2 x 0.5))C	6	44	60
85203059	(3 x (2 x 0.5))C	8.05	57	89
85203060	(4 x (2 x 0.5))C	8.8	68	104
85203061	(5 x (2 x 0.5))C	9.7	83	127
85203062	(6 x (2 x 0.5))C	10.5	99	165
85203063	(8 x (2 x 0.5))C	12.2	125	200
85203064	(10 x (2 x 0.5))C	14.2	175	256
85203065	(14 x (2 x 0.5))C	14.7	187	288

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 9.5 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

For further information regarding the life-time, please contact your technical advisor.

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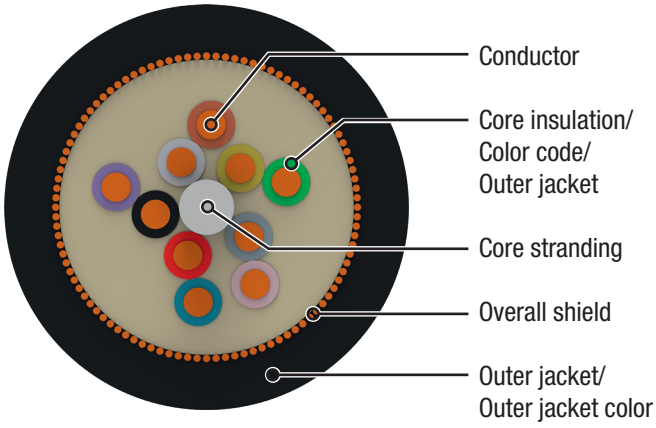
HDplus TPE 233-C-TP

Shielded data cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 1,312 ft (400 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- For processing units and machine tools, storage and retrieval machines, packaging machines, quick handling, semiconductor handling, outdoor cranes, low temperature applications

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of bare copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	2 cores each twisted in pairs with short pitch lengths, core pairs also twisted with short pitch lengths.
Color code	Color code according to DIN47100
Inner jacket	Developed for energy chains, TPE based mixture via pair shielding.
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant TPE based mixture
Outer jacket color	Black RAL9005
Printing	Black

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HDplus TPE 233-C-TP

Shielded data cables
for highest mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 50363-4-1
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 6.8 x d
	Flexible	min. 5 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	-31 °F to +212 °F (-35 °C to +100 °C)
	Flexible	-58 °F to +212 °F (-50 °C to +100 °C) (according to DIN EN 60811-504)
	Fixed	-67 °F to +212 °F (-55 °C to +100 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1,312 ft (400 m)	

Electrical properties

Nominal voltage	300 V
Test voltage	2000 V

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HDplus TPE 233-C-TP

Shielded data cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85316109	(2 x (2 x 0.25))C	6.8	25.5	66.0
85316110	(3 x (2 x 0.25))C	8.4	36.6	74.0
85316111	(4 x (2 x 0.25))C	9.1	41.7	85.0
85316112	(5 x (2 x 0.25))C	9.8	51.4	97.0
85316113	(6 x (2 x 0.25))C	10.5	56.5	118.0
85316114	(8 x (2 x 0.25))C	11.7	71.1	142.0
85316115	(10 x (2 x 0.25))C	13.3	92.3	151.0
85316116	(14 x (2 x 0.25))C	13.5	112.4	192.0
85316117	(2 x (2 x 0.34))C	7.3	30.8	84.0
85316118	(3 x (2 x 0.34))C	8.8	42.2	94.0
85316119	(4 x (2 x 0.34))C	9.5	49.0	109.0
85316120	(5 x (2 x 0.34))C	10.2	60.2	131.0
85316121	(6 x (2 x 0.34))C	10.9	67.0	149.0
85316122	(8 x (2 x 0.34))C	12.6	86.9	180.0
85316123	(10 x (2 x 0.34))C	14.2	111.4	207.0
85316124	(14 x (2 x 0.34))C	14.4	138.4	258.0
85316125	(2 x (2 x 0.5))C	7.8	37.4	103.0
85316126	(3 x (2 x 0.5))C	9.6	53.9	117.0
85316127	(4 x (2 x 0.5))C	10.2	66.0	143.0
85316128	(5 x (2 x 0.5))C	11.4	78.6	154.0
85316129	(6 x (2 x 0.5))C	12.0	89.0	187.0
85316130	(8 x (2 x 0.5))C	13.9	121.5	230.0
85316131	(10 x (2 x 0.5))C	15.9	152.0	278.0
85316132	(14 x (2 x 0.5))C	16.3	191.9	340.0
85316133	(4 x (2 x 0.75))C	12.6	90.0	201.0
85316134	(8 x (2 x 0.75))C	16.3	180.0	347.0
85316135	(2 x (2 x 1.0))C	11.2	66.5	152.0
85316136	(4 x (2 x 1.0))C	13.8	128.0	260.0
85316137	(6 x (2 x 1.0))C	16.2	178.2	354.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 8.5 x d and temperature between -13 °F to + 194 °F (-25 °C bis +90 °C)

For further information regarding the life-time, please contact your technical advisor.

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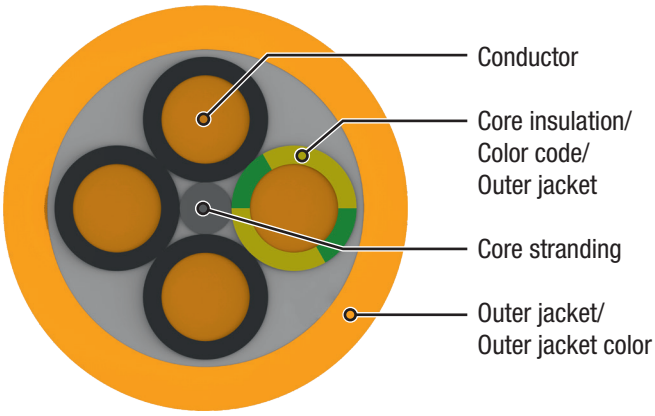
HD PUR 322

Unshielded motor cables
for high mechanical performance

evocable® HD PUR 322

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 32.8 ft (10 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications without direct sun radiation
- Processing units and machine tools, low temperature handling

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	Layer twisted with optimized pitch length
Color code	Black with white numbers + green/yellow grounding conductors
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, halogen-free and flame retardant PUR based mixture
Outer jacket color	Orange RAL2003
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 322

Unshielded motor cables
for high mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 50363-4-1
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 21223 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 10 x d min. 8 x d min. 5 x d
Temperature	Energy chain linear Flexible Fixed	-13 °F to +176 °F (-25 °C to +80 °C) -49 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504) -58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 6.56 ft/s (2 m/s)
a max.	164 ft/s² (50 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 32.81 ft (10 m)	

Electrical properties

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HD PUR 322

Unshielded motor cables
for high mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85223010	4G1,5	7.9	57.6	97.0
85223012	4G2,5	9.3	96.0	151.0
85223013	5G2,5	10.1	120.0	187.0
85223014	4G4,0	11.3	157.6	232.0
85223015	5G4,0	12.5	192.0	295.0
85223016	4G6,0	13.8	230.4	348.0
85223017	5G6,0	15.5	288.0	436.0
85223018	4G10,0	17.7	384.0	570.0
85223019	5G10,0	19.8	480.0	721.0
85223020	4G16,0	21.0	614.4	849.0
85223021	5G16,0	23.6	768.0	1056.0
85223022	4G25,0	25.1	960.0	1206.0
85223024	4G35,0	31.8	1344.0	1914.0
85223025	4G50,0	37.5	1920.0	2715.0

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 12 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

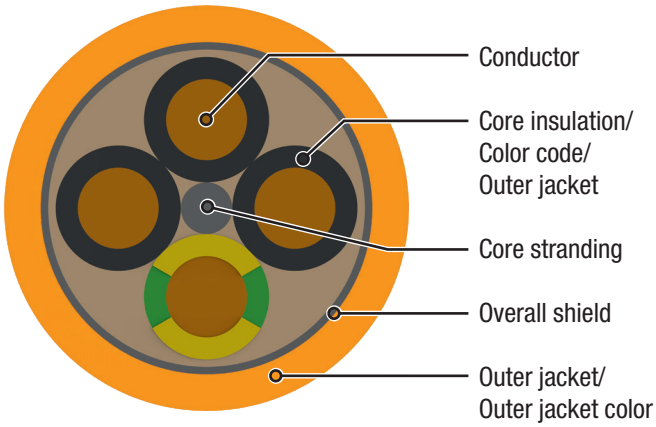
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 322-C

Shielded motor cables
for high mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 32.8 ft (10 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications without direct sun radiation
- Processing units and machine tools, low temperature handling

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	Layer twisted with optimized pitch length
Color code	Black with white numbers + green/yellow grounding conductors
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 85 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, halogen-free and flame retardant PUR based mixture
Outer jacket color	Orange RAL2003
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 322-C

Shielded motor cables
for high mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 50363-4-1
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 21223 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 10 x d min. 8 x d min. 5 x d
Temperature	Energy chain linear Flexible Fixed	-13 °F to +176 °F (-25 °C to +80 °C) -49 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504) -58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 6.56 ft/s (2 m/s)
a max.	164 ft/s² (50 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 32.81 ft (10 m)	

Electrical properties

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 322-C

Shielded motor cables
for high mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85224010	(4G1,5)C	9.5	90.0	163.0
85224012	(4G2,5)C	11.0	135.0	233.0
85224014	(4G4,0)C	12.3	205.0	314.0
85224016	(4G6,0)C	15.1	296.0	437.0
85224018	(4G10,0)C	18.0	488.0	654.0
85224020	(4G16,0)C	22.2	769.0	1016.0
85224022	(4G25,0)C	25.9	1098.0	1440.0
85224024	(4G35,0)C	29.4	1525.0	1991.0
85224025	(4G50,0)C	34.2	2131.0	2604.0

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 12 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

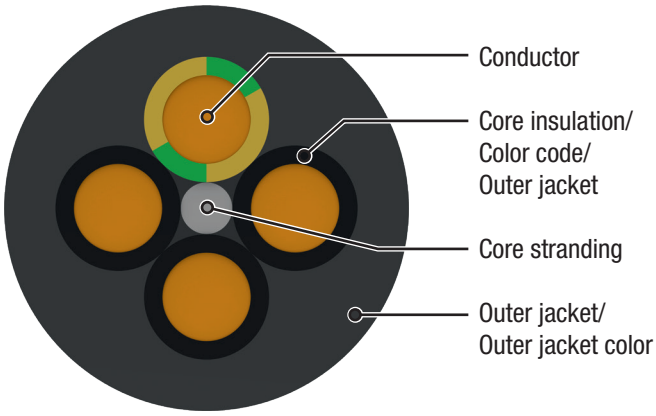
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus PVC 331

Unshielded motor cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Light oil influence
- Indoor and outdoor applications
- Processing units and machine tools, storage and retrieval machines, packaging industry, quick handling, indoor cranes

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	Layer twisted with optimized pitch length
Color code	Black with white numbers + green/yellow grounding conductors
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant PVC based mixture
Outer jacket color	Black RAL9005
Printing	White

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus PVC 331

Unshielded motor cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 2570 +176 °F(80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 7.5 x d min. 6 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	+41 °F to +158 °F (+5 °C to +70 °C) +23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504) +5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 16.41 ft/s (5 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical properties

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus PVC 331

Unshielded motor cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85321010	4G1,5	7.9	57.6	100.0
85321012	4G2,5	9.3	96.0	156.0
85321013	5G2,5	10.1	120.0	191.0
85321014	4G4,0	11.3	157.6	238.0
85321015	5G4,0	12.5	192.0	300.0
85321016	4G6,0	13.8	230.4	357.0
85321017	5G6,0	15.5	288.0	447.0
85321018	4G10,0	17.7	384.0	582.0
85321019	5G10,0	19.8	480.0	735.0
85321020	4G16,0	22.3	614.0	925.0
85321021	5G16,0	24.9	768.0	1167.0
85321022	4G25,0	26.1	960.0	1382.0
85321024	4G35,0	31.8	1344.0	1960.0
85321025	4G50,0	37.5	1920.0	2773.0

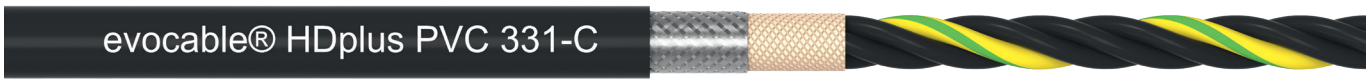
Life-time up to 10 million cycles with the following parameters:
Bending factor 9.5 x d and temperature between +5 °F to + 140 °F (-15 °C bis +60 °C)

For further information regarding the life-time, please contact your technical advisor.

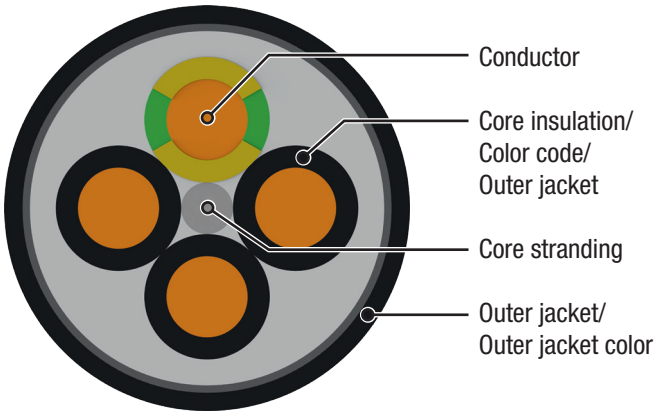
murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus PVC 331-C

Shielded motor cables
for highest mechanical performance



Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Light oil influence
- Indoor and outdoor applications
- Processing units and machine tools, storage and retrieval machines, packaging industry, quick handling, indoor cranes

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	Layer twisted with optimized pitch length
Color code	Black with white numbers + green/yellow grounding conductors
Inner jacket	Developed for energy chains, PVC based mixture
Overall shield	Extremely bending-resistant tinned copper braid Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant PVC based mixture
Outer jacket color	Black RAL9005
Printing	White

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus PVC 331-C

Shielded motor cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 2570 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 7.5 x d
	Flexible	min. 6 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	+41 °F to +158 °F (+5 °C to +70 °C)
	Flexible	+23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504)
	Fixed	+5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	16.41 ft/s (5 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical properties

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HDplus PVC 331-C

Shielded motor cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85322010	(4G1,5)C	10.1	85.4	153.0
85322012	(4G2,5)C	11.6	132.0	220.0
85322013	(5G2,5)C	12.8	150.0	271.0
85322014	(4G4,0)C	14.1	212.0	345.0
85322015	(5G4,0)C	15.3	260.0	415.0
85322016	(4G6,0)C	16.7	305.0	490.0
85322017	(5G6,0)C	18.3	378.0	605.0
85322018	(4G10,0)C	21.2	513.0	790.0
85322019	(5G10,0)C	23.1	660.0	990.0
85322020	(4G16,0)C	26.0	805.0	1240.0
85322021	(5G16,0)C	28.6	990.0	1495.0
85322022	(4G25,0)C	29.5	1210.0	1740.0
85322024	(4G35,0)C	35.4	1650.0	2410.0
85322025	(4G50,0)C	41.4	2300.0	3350.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 9.5 x d and temperature between +59 °F to + 140 °F (+15 °C bis +60 °C)

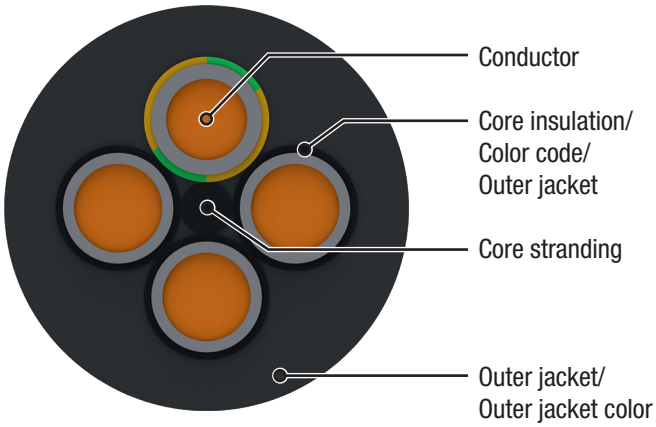
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333

Unshielded motor cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- Processing units and machine tools, storage and retrieval units, packaging industry, semiconductor insertion, quick handling, outdoor cranes, low temperature handling

Cable structure

Conductor	Conductor rope consisting of pre-strands (according to DIN EN 60228)
Core insulation	PP, low-capacity
Core stranding	Layer twisted
Color code	Black with white numbers + green/yellow grounding conductors
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, flame retardant TPE based mixture
Outer jacket color	Black RAL 9005
Printing	White

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333

Unshielded motor cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21218 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 7.5 x d
	Flexible	min. 6 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	-31 °F to +194°F (-35 °C to +90 °C)
	Flexible	-49 °F to +194 °F (-45 °C to +90 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +194 °F (-50 °C to +90 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	19.69 ft/s (6 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1312.34 ft (400 m)	

Electrical properties

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333

Unshielded motor cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85325010	4G1,5	7.9	57.6	97.0
85325012	4G2,5	9.3	96.0	151.0
85325013	5G2,5	10.1	120.0	187.0
85325014	4G4,0	11.3	157.6	232.0
85325015	5G4,0	12.5	192.0	295.0
85325016	4G6,0	13.8	230.4	348.0
85325017	5G6,0	15.5	288.0	436.0
85325018	4G10,0	17.7	384.0	570.0
85325019	5G10,0	19.8	480.0	721.0
85325020	4G16,0	22.3	614.0	849.0
85325021	5G16,0	24.9	768.0	1056.0
85325022	4G25,0	26.1	960.0	1206.0
85325024	4G35,0	31.8	1344.0	1914.0
85325025	4G50,0	37.5	1920.0	2715.0

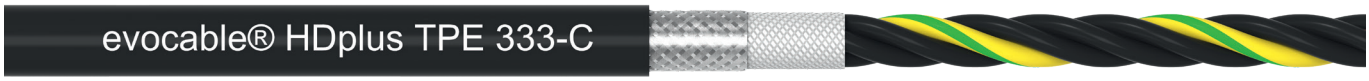
Life-time up to 10 million cycles with the following parameters:
Bending factor 9.5 x d and temperature between -13 °F to + 176 °F (-25 °C bis +80 °C)

For further information regarding the life-time, please contact your technical advisor.

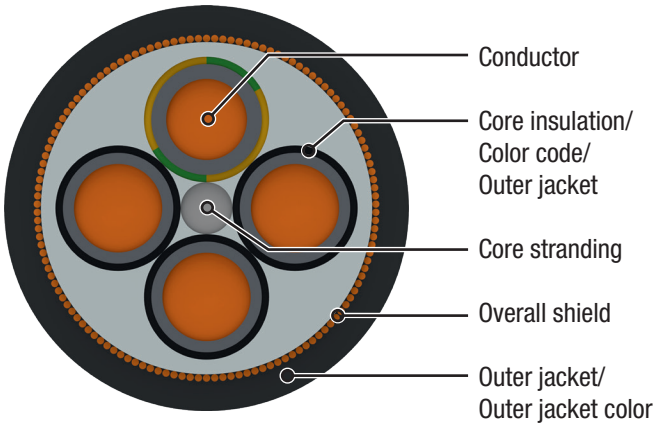
murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-C

Shielded motor cables
for highest mechanical performance



Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1,312 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- Processing units and machine tools, storage and retrieval units, packaging industry, semiconductor insertion, quick handling, outdoor cranes, low temperature handling

Cable structure

Conductor	Conductor rope consisting of pre-strands (according to DIN EN 60228)
Core insulation	PP, low-capacity
Core stranding	Layer twisted
Color code	Black with white numbers + green/yellow grounding conductors
Inner jacket	Developed for energy chains, TPE based mixture
Overall shield	Extremely bending-resistant tinned copper braid Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant TPE based mixture
Outer jacket color	Black RAL 9005
Printing	White

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-C

Shielded motor cables
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21218 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 7.5 x d min. 6 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	-31 °F to +194 °F (-35 °C to +90 °C) -49 °F to +194 °F (-45 °C to +90 °C) (according to DIN EN 60811-504) -58 °F to +194 °F (-50 °C to +90 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 19.69 ft/s (6 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1312.34 ft (400 m)	

Electrical properties

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-C

Shielded motor cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85326010	(4G1,5)C	10.1	85.4	148.0
85326012	(4G2,5)C	11.6	132.0	210.0
85326013	(5G2,5)C	12.8	150.0	260.0
85326014	(4G4,0)C	14.1	212.0	325.0
85326015	(5G4,0)C	15.3	260.0	395.0
85326016	(4G6,0)C	16.7	305.0	461.0
85326017	(5G6,0)C	18.3	378.0	561.0
85326018	(4G10,0)C	21.2	513.0	692.0
85326019	(5G10,0)C	23.1	660.0	920.0
85326020	(4G16,0)C	26.0	805.0	1093.0
85326021	(5G16,0)C	28.6	990.0	1405.0
85326022	(4G25,0)C	29.5	1210.0	1623.0
85326024	(4G35,0)C	35.4	1650.0	2290.0
85326025	(4G50,0)C	41.4	2300.0	3240.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 9.5 x d and temperature between -13 °F to +176 °F (-25 °C bis +80 °C)

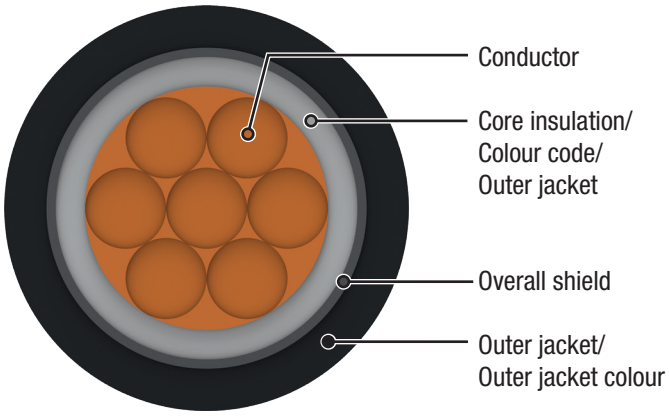
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-C-S

Shielded single core
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- Processing units and machine tools, Storage and retrieval units, packaging industry, semiconductor insertion, quick handling, Outdoor cranes, low temperature handling

Cable structure

Conductor	Conductor rope consisting of pre-strands (according to DIN EN 60228)
Core insulation	PP, low-capacity
Overall shield	Extremely bending-resistant tinned copper braid Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, flame retardant TPE based mixture
Outer jacket colour	Black RAL 9005
Printing	White

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-C-S

Shielded single core
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21218 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 7.5 x d min. 6 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	-31 °F to +194 °F (-35 °C to +90 °C) -49 °F to +194 °F (-45 °C to +90 °C) (according to DIN EN 60811-504) -58 °F to +194 °F (-50 °C to +90 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1312.34 ft (400 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-C-S

Shielded single core
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85326100	(1 x 2.5)C	6.4	36.2	58.0
85326101	(1 x 4.0)C	7.0	53.7	78.0
85326102	(1 x 6.0)C	7.8	74.2	114.0
85326103	(1 x 10.0)C	8.7	115.4	160.0
85326104	(1 x 16.0)C	10.5	178.7	238.0
85326105	(1 x 25.0)C	12.4	271.8	348.0
85326106	(1 x 35.0)C	14.0	389.3	483.0
85326107	(1 x 50.0)C	15.5	540.8	639.0
85326108	(1 x 70.0)C	18.0	743.5	880.0
85326109	(1 x 95.0)C	21.1	1027.6	1109.0
85326110	(1 x 120.0)C	23.2	1276.8	1410.0
85326111	(1 x 150.0)C	24.6	1571.0	1736.0
85326112	(1 x 185.0)C	28.7	1937.0	2071.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 9.5 x d and temperature between -13 °F to + 176 °F (-25 °C bis +80 °C)

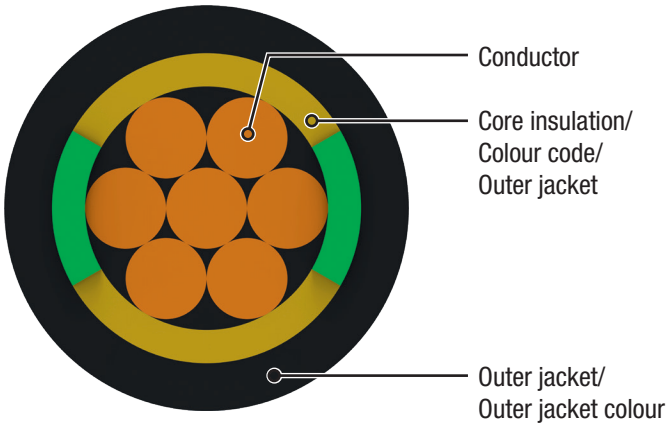
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-PE

Unshielded single core
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- Processing units / machine tools, Storage and retrieval units, packaging industry, semiconductor insertion, quick handling, outdoor cranes, low temperature

Cable structure

Conductor	Conductor rope consisting of pre-strands (according to DIN EN 60228)
Core insulation	PP, low-capacity
Colour code	Green/yellow
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, flame retardant TPE based mixture (with tear strip)
Outer jacket	Black RAL 9005
Printing	White

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-PE

Unshielded single core
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21218 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 7.5 x d min. 6 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	-31 °F to +194 °F (-35 °C to +90 °C) -49 °F to +194 °F (-45 °C to +90 °C) (according to DIN EN 60811-504) -58 °F to +194 °F (-50 °C to +90 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1312.34 ft (400 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-PE

Unshielded single core
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85325201	1G2,5	5.8	25.0	47.0
85325202	1G4,0	6.4	40.0	64.0
85325203	1G6,0	7.3	60.0	96.0
85325204	1G10,0	8.3	100.0	142.0
85325205	1G16,0	9.8	160.0	211.0
85325206	1G25,0	11.9	250.0	323.0
85325207	1G35,0	12.9	350.0	428.0
85325208	1G50,0	14.9	500.0	598.0
85325209	1G70,0	17.0	700.0	801.0
85325210	1G95,0	19.5	950.0	1061.0
85325211	1G120,0	22.1	1200.0	1280.0
85325212	1G150,0	23.6	1500.0	1605.0
85325213	1G185,0	27.7	1850.0	1996.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 9.5 x d and temperature between -13 °F to + 176 °F (-25 °C bis +80 °C)

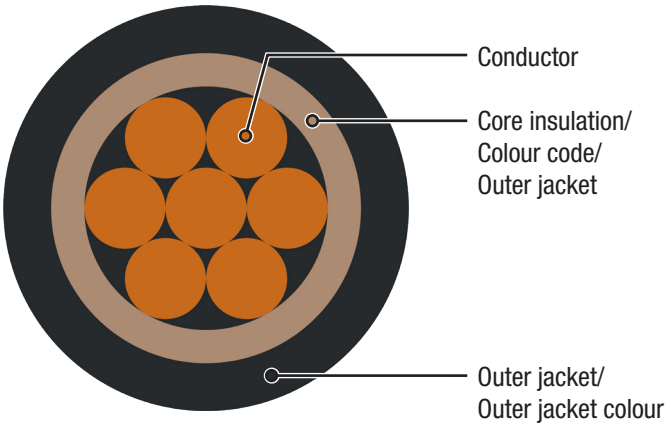
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-S

Unshielded single core
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications, UV-resistant
- Processing units / machine tools, Storage and retrieval units, packaging industry, semiconductor insertion, quick handling, Outdoor cranes, low temperature handling

Cable structure

Conductor	Conductor rope consisting of pre-strands (according to DIN EN 60228)
Core insulation	PP, low-capacity
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant TPE based mixture
Outer jacket colour	Black RAL 9005
Printing	White

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HDplus TPE 333-S

Unshielded single core
for highest mechanical performance

Properties and approvals

UV resistance	High
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21218 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 7.5 x d
	Flexible	min. 6 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	-31 °F to +194 °F (-35 °C to +90 °C)
	Flexible	-49 °F to +194 °F (-45 °C to +90 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +194 °F (-50 °C to +90 °C) (according to DIN EN 50305)
v max.	Self-supporting 32.81 ft/s (10 m/s) Gliding 19.69 ft/s (6 m/s)	
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1312.34 ft (400 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 333-S

Unshielded single core
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85325100	1 x 2.5	5.8	25.0	47.0
85325101	1 x 4.0	6.4	40.0	64.0
85325102	1 x 6.0	7.3	60.0	96.0
85325103	1 x 10.0	8.3	100.0	142.0
85325104	1 x 16.0	9.8	160.0	211.0
85325105	1 x 25.0	11.9	250.0	323.0
85325106	1 x 35.0	12.9	350.0	428.0
85325107	1 x 50.0	14.9	500.0	598.0
85325108	1 x 70.0	17.0	700.0	801.0
85325109	1 x 95.0	19.5	950.0	1061.0
85325110	1 x 120.0	22.1	1200.0	1280.0
85325111	1 x 150.0	23.6	1500.0	1605.0
85325112	1 x 185.0	27.7	1850.0	1996.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 9.5 x d and temperature between -13 °F to + 176 °F (-25 °C bis +80 °C)

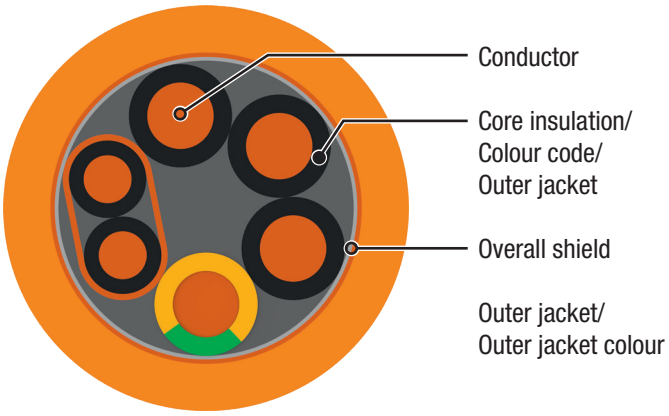
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 422-C

Shielded servo cables
for high mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 32.8 ft (10 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications without direct sun radiation
- Processing units and machine tools, low temperature handling

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	Layer twisted with optimised pitch length
Colour code	Power conductors black with white numbers + green/yellow grounding conductors; control pairs black with white numbers
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 85 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, Halogen-free and flame retardant PUR based mixture
Outer jacket colour	Orange RAL2003
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 422-C

Shielded servo cables
for high mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 50363-4-1
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 21223 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 10 x d min. 8 x d min. 5 x d
Temperature	Energy chain linear Flexible Fixed	-13 °F to +176 °F (-25 °C to +80 °C) -40 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504) -58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 6.56 ft/s (2 m/s)
a max.	164.1 ft/s² (50 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 32.8 ft (10 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HD PUR 422-C

Shielded servo cables
for high mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85234005	(4G0.75+(2 x 0.5))C	9.7	99.0	165.0
85234006	(4G1.5+(2 x 1.5))C	12.1	163.5	251.0
85234007	(4G2.5+(2 x 1.5))C	13.8	196.0	316.0
85234008	(4G4.0+(2 x 1.5))C	15.3	260.5	408.0
85234009	(4G6.0+(2 x 1.5))C	17.3	365.0	535.0
85234010	(4G10.0+(2 x 1.5))C	20.4	560.0	755.0
85234011	(4G16.0+(2 x 1.5))C	23.3	816.0	1090.0
85234012	(4G25.0+(2 x 1.5))C	26.9	1172.0	1570.0
85234013	(4G35.0+(2 x 1.5))C	31.8	1595.0	2073.0
85234014	(4G50.0+(2 x 1.5))C	35.3	2214.0	2800.0
85234017	(4G2.5+2 x (2 x 1.5))C	16.1	243.0	377.0
85234018	(4G4.0+2 x (2 x 1.5))C	17.2	312.0	450.0
85234019	(4G6.0+2 x (2 x 1.5))C	19.9	424.0	578.0
85234020	(4G10.0+2 x (2 x 1.5))C	23.1	589.0	810.0
85234021	(4G16.0+2 x (2 x 1.5))C	26.5	838.0	1169.0
85234022	(4G25.0+2 x (2 x 1.5))C	29.5	1217.0	1513.0
85234023	(4G35.0+2 x (2 x 1.5))C	32.1	1640.0	1969.0
85234024	(4G50.0+2 x (2 x 1.5))C	37.8	2273.0	2875.0
85234050	(4G1.5+(3 x 1.0))C	12.0	163.5	213.0
85234051	(4G2.5+(3 x 1.0))C	13.8	196.0	284.0
85234052	(4G4.0+(3 x 1.0))C	15.2	260.5	366.0
85234053	(4G6.0+(3 x 1.5))C	17.9	367.0	492.0
85234054	(4G10.0+(3 x 1.5))C	20.9	563.0	717.0
85234055	(4G16.0+(3 x 1.5))C	24.3	821.0	1052.0

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 12 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

For further information regarding the life-time, please contact your technical advisor.

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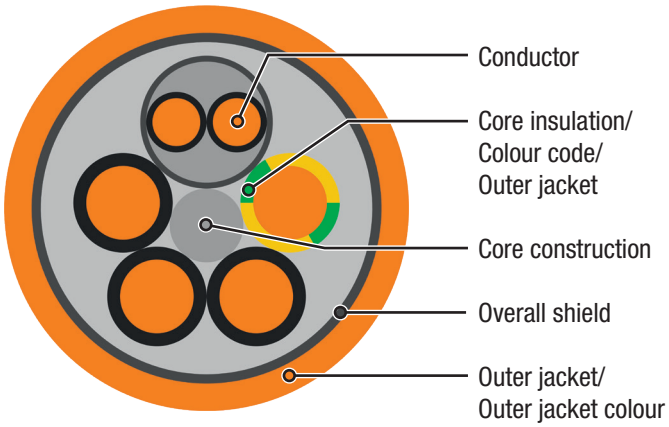
HDplus TPE 433-C

Shielded servo cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications
- Storage and retrieval units, processing / machine tools, quick handling, outdoor cranes, low temperature handling

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	PP, low capacity and halogen-free
Conductor construction	Layer twisted with optimised pitch length
Colour code	Power conductors black with white numbers + green/yellow grounding conductors; pair shielding black with white numbers
Inner jacket	Developed for energy chains, TPE based mixture
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 85 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant TPE based mixture
Outer jacket colour	Orange RAL2003
Printing	Black

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HDplus TPE 433-C

Shielded servo cables
for highest mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 60811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21218 +176 °F (80 °C) 1000 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 6.8 x d min. 5 x d min. 4 x d
Temperature	Energy chain linear Flexible Fixed	-31 °F to +212 °F (-35 °C to +100 °C) -58 °F to +212 °F (-50 °C to +100 °C) (according to DIN EN 60811-504) -67 °F to +212 °F (-55 °C to +100 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 16.41 ft/s (5 m/s)
a max.	262.5 ft/s² (80 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 1312.34 ft (400 m)	

Electrical information

Nominal voltage	600 V / 1000 V
Test voltage	4000 V

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HDplus TPE 433-C

Shielded servo cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85336005	(4G0.75+(2 x 0.5))C	10.7	76.0	160.0
85336006	(4G1.5+(2 x 1.5))C	12.9	136.0	250.0
85336007	(4G2.5+(2 x 1.5))C	15.2	199.0	353.0
85336008	(4G4.0+(2 x 1.5))C	16.5	265.0	435.0
85336009	(4G6.0+(2 x 1.5))C	18.6	334.0	545.0
85336010	(4G10.0+(2 x 1.5))C	22.3	560.0	813.0
85336011	(4G16.0+(2 x 1.5))C	25.0	812.0	1165.0
85336012	(4G25.0+(2 x 1.5))C	28.9	1194.0	1582.0
85336013	(4G35.0+(2 x 1.5))C	33.2	1620.0	2090.0
85336014	(4G50.0+(2 x 1.5))C	37.2	2237.0	2845.0
85336015	(4G0.75+2 x (2 x 0.5))C	12.2	95.0	198.0
85336017	(4G2.5+2 x (2 x 1.5))C	17.2	262.0	454.0
85336019	(4G6.0+2 x (2 x 1.5))C	19.8	448.0	694.0
85336020	(4G10.0+2 x (2 x 1.5))C	24.6	620.0	948.0
85336021	(4G16.0+2 x (2 x 1.5))C	28.0	883.0	1307.0
85336022	(4G25.0+2 x (2 x 1.5))C	33.3	1273.0	1814.0
85336023	(4G35.0+2 x (2 x 1.5))C	34.8	1680.0	220.0
85336024	(4G50.0+2 x (2 x 1.5))C	40.4	2347.0	3153.0
85336050	(4G1.5+(3 x 1.0))C	12.9	135.0	253.0
85336051	(4G2.5+(3 x 1.0))C	15.4	198.0	361.0
85336052	(4G4.0+(3 x 1.0))C	16.5	264.0	448.0
85336053	(4G6.0+(3 x 1.5))C	19.8	400.0	617.0
85336054	(4G10.0+(3 x 1.5))C	22.4	572.0	843.0
85336055	(4G16.0+(3 x 1.5))C	26.1	832.0	1202.0

Life-time up to 10 million cycles with the following parameters: Travel distance 23.81 ft (10 m), bending radius 8.5 x d and temperature -13 °F to +194 °F (-25 °C bis +90 °C)

For further information regarding the life-time, please contact your technical advisor.

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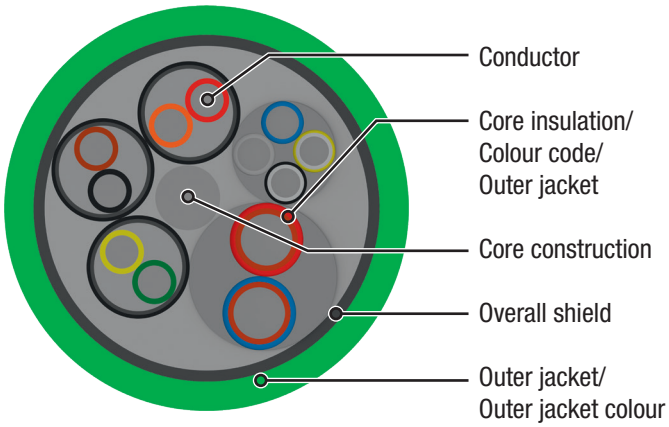
SD PVC 511-C

Shielded measurement system cables
for medium mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 32.8 ft (10 m) in gliding applications
- Light oil influence
- For storage and retrieval machines, processing / packaging machines, handling, indoor cranes, wood and stone processing

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of bare copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	according to measuring system specifications
Colour code	according to measuring system specifications
Element shield	extremely bending resistant, tinned copper Coverage: 90% optical
Element jacket	Developed for energy chains, TPE based mixture with pair shielding.
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 80 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion and flame retardant PVC based mixture
Outer jacket colour	Yellow green RAL6018
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 511-C

Shielded measurement system cables
for medium mechanical performance

Properties and approvals

UV resistance	Medium	
Oil resistance	According to DIN EN 50363-4-1	
Flame retardant	According to IEC 60332-1-2	
Silicone-free	Free of paint wetting impairment substances (according to PV 3.10.7 – as of 1992)	
UL/CSA	AWM Style 2464 +176 °F (80 °C) 300 V; 85182020: Style 2571 176 °F (80 °C) 30 V	
RoHS-II	According to 2011/65/EU	
CE	According to 2014/35/EU	

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 10 x d min. 8 x d min. 5 x d
Temperature	Energy chain linear Flexible Fixed	+41 °F to +158 °F (+5 °C to +70 °C) +23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504) +5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	16.41 ft/s (5 m/s) 9.84 ft/s (3 m/s)
a max.	98.4 ft/s² (30 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 32.8 ft (10 m)	

Electrical information

Nominal voltage	300 V
Test voltage	2000 V

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SD PVC 511-C

Shielded measurement system cables
for medium mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
acc. to Siemens MC 500				
85182010	(4 x 2 x 0.34+4 x 0.5)C	9.2	77	119
85182011	(3 x (2 x 0.14)+2 x (0.5))C	8.8	76.4	113
85182012	(3 x (2 x 0.14)+4 x 0.14+2 x 0.5)C	9.2	69	117
acc. to Siemens Drive Cliq				
85182020	(2 x (2 x 0.15)+(2 x 0.38))C	7.05	107.6	66
acc. to Bosch Rexroth				
85182030	(4 x 2 x 0.25+2 x 0.5)C	8.7	52	120
85182031	(4 x 2 x 0.25+2 x 1.0)C	9.1	68.8	106
85182032	(4 x 1.0+4 x 2 x 0.14+(4 x 0.14))C	10	69.6	160
acc. to Lenze				
85182040	3 x (2 x 0.14)C+(2 x 0.5)C	9.6	55.6	120
85182041	4 x (2 x 0.14)C+(2 x 1.0)C	9.1	91.2	162
85182042	3 x (2 x 0.14)C+(3 x 0.14)C	9.6	49.2	108
acc. to SEW				
85182070	(5 x 2 x 0.25)C	7.55	45.1	86
85182071	(6 x 2 x 0.25)C	8.9	51.2	98

Life-time up to 10 million cycles with the following parameters: Travel distance 10 m, bending radius 12 x d and temperature +59 °F to +140 °F (+15 °C bis +60 °C)

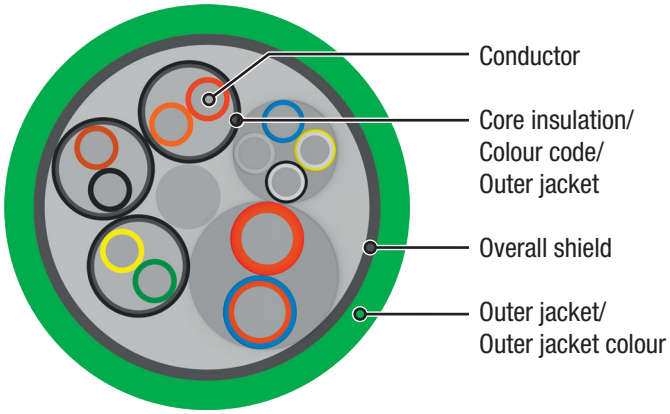
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 522-C

Shielded measurement system cables
for high mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 32.8 ft (10 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications without direct sun radiation
- Processing units and machine tools, low temperature handling

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of galvanised copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	according to measuring system specifications
Colour code	according to measuring system specifications
Element shield	extremely bending resistant, tinned copper Coverage: 90% optical
Element jacket	Developed for energy chains, TPE based mixture via pair shielding.
Interlayer	Foil tape over the outer layer
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 85 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion, halogen-free and flame retardant PUR based mixture
Outer jacket colour	Yellow green RAL6018
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 522-C

Shielded measurement system cables
for high mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 20233 +176 °F (80 °C) 300 V; 85244020: Style 20236 +176 °F (80 °C) 30 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 10 x d
	Flexible	min. 8 x d
	Fixed	min. 5 x d
Temperature	Energy chain linear	-13 °F to +176 °F (-25 °C to +80 °C)
	Flexible	-40 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting	16.41 ft/s (5 m/s)
	Gliding	9.84 ft/s (3 m/s)
a max.	98.4 ft/s² (30 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 32.8 ft (10 m)	

Electrical information

Nominal voltage	300 V
Test voltage	2000 V

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HD PUR 522-C

Shielded measurement system cables
for high mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
Siemens MC 800 Plus				
85244011	(4 x 2 x 0.34+4 x 0.5)C	9.15	77	119
85244012	(3 x (2 x 0.14)+2 x (0.5))C	9.25	69	118
85244013	(3 x (2 x 0.14)+4 x 0.14+2 x 0.5)C	9.15	66	114
85244014	(3 x (2 x 0.14)+4 x 0.14+4 x 0.25+2 x 0.5)C	9.85	86	138
85244015	(4 x 2 x 0.18)C	6.6	35	56
85244016	(2 x 2 x 0.18)C	5.2	24	37
85244017	(12 x 0.22)C	7.1	49	75
Siemens Drive Cliq				
85244020	(2 x (2 x 0.20)+(2 x 0.38))C	7.05	109.6	164
Bosch Rexroth				
85244030	(4 x 2 x 0.25+2 x 0.5)C	n.a.	48.7	125
85244031	(4 x 2 x 0.25+2 x 1.0)C	n.a.	68.7	135
85244032	(9 x 0.5)C	n.a.	70.8	122
85244033	(4 x 1.0+4 x 2 x 0.14+(4 x 0.14))C	n.a.	103.7	169
85244034	(3 x (2 x 0.25)+3 x 0.25+2 x 1.0)C	n.a.	128.4	140
85244035	(2 x 2 x 0.25+2 x 0.5)C	n.a.	41.8	70
Lenze				
85244040	3 x (2 x 0.14)C+(2 x 0.5)C	10.15	54	119
85244041	4 x (2 x 0.14)C+(2 x 1.0)C	11.3	73	162
85244042	3 x (2 x 0.14)C+(3 x 0.14)C	9.45	43	108
B&R				
85244050	(3 x 2 x AWG24)C	6.7	31	58
85244051	(5 x 2 x 0.14+2 x 0.5)C	8.05	48	80
Heidenhain				
85244060	(3 x (2 x 0.14)+2 x (0.5))C	8.65	75	110
85244061	(4 x 2 x 0.14+4 x 0.5)C	8.75	55.7	106
85244062	(3 x (2 x 0.14)+2 x (1.0))C	9.35	81	134
85244063	(4 x 2 x 0.14+(4 x 0.14)+4 x 0.5)C	9.25	81	120
85244064	(10 x 0.14+2 x 0.5)C	7.45	43	76
SEW				
85244070	(5 x 2 x 0.25)C	n.a.	n.a.	86
85344371	(6 x 2 x 0.25)C	n.a.	n.a.	98

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 522-C

Shielded measurement system cables
for high mechanical performance

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 12 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

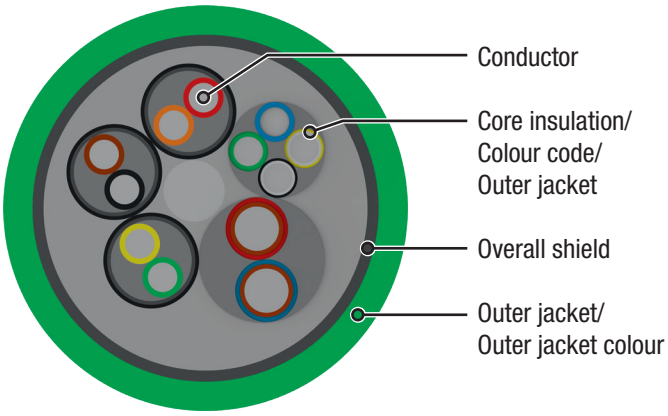
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus PUR 532-C

Shielded measurement system cables
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and up to 328.1 ft (100 m) in gliding applications
- Very high oil resistance
- Indoor and outdoor applications without direct sun radiation
- Processing units / machine tools, Storage and retrieval units, quick handling, semiconductor insertion, indoor cranes low temperature handling

Cable structure

Conductor	Special ultra-fine conductor in a highly flexible design consisting of galvanised copper wires.
Core insulation	PP, low capacity and halogen-free
Core construction	according to measuring system specifications
Colour code	according to measuring system specifications
Element shield	extremely bending resistant, tinned copper Coverage: 90% optical
Element jacket	Developed for energy chains, TPE based mixture via pair shielding.
Inner jacket	Developed for energy chains, TPE based mixture via pair shielding.
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 85 % optical coverage
Outer jacket	Developed for energy chains, oil resistant, highly abrasion resistant, low adhesion halogen-free and flame retardant PUR based mixture
Outer jacket colour	Yellow green RAL6018
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus PUR 532-C

Shielded measurement system cables
for highest mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN VDE 0473 Teil 811-404
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754
UL/CSA	AWM Style 20233 176 °F (80 °C) 300 V; 85344320: Style 20236 80 °C 30 V
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 7.5 x d
	Flexible	min. 6 x d
	Fixed	min. 4 x d
Temperature	Energy chain linear	-13 °F to +176 °F (-25 °C to +80 °C)
	Flexible	-40 °F to +176 °F (-40 °C to +80 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +176 °F (-50 °C to +80 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	16.41 ft/s (5 m/s)
a max.	164.1 ft/s² (50 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 328.1 ft (100 m)	

Electrical information

Nominal voltage	300 V
Test voltage	2000 V

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HDplus PUR 532-C

Shielded measurement system cables
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
Siemens MC 800 Plus				
85344311	(4 x 2 x 0.34+4 x 0.5)C	10.5	92.4	119
85344312	(3 x (2 x 0.14)+2 x (0.5))C	12.0	82.9	118
85344313	(3 x (2 x 0.14)+4 x 0.14+2 x 0.5)C	11.0	79.2	114
85344314	(3x(2x0.14)+4x0.14+4x0.25+2x0.5)C	11.5	103.2	138
85344315	(4 x 2 x 0.18)C	8.0	42	56
85344316	(2 x 2 x 0.18)C	6.5	28.9	37
85344317	(12 x 0.22)C	9.0	58.8	75
Siemens Drive Cliq				
85344320 *)	(2 x (2 x 0.20)+(2 x 0.38))C	7.25	109.6	164
Bosch Rexroth				
85344330	(4 x 2 x 0.25+2 x 0.5)C	9.1	48.7	125
85344331	(4 x 2 x 0.25+2 x 1.0)C	10.5	75	135
85344332	(9 x 0.5)C	10.0	77.2	122
Lenze				
85344340 [1])	3 x (2 x 0.14)C+(2 x 0.5)C	12.0	69	119
85344341 [1])	4 x (2 x 0.14)C+(2 x 1.0)C	13.5	87.6	162
85344342 [1])	3 x (2 x 0.14)C+(3 x 0.14)C	11.0	51.6	108
B&R				
85344350	(3 x 2 x AWG24)C	8.5	37.2	58
85344351	(5 x 2 x 0.14+2 x 0.5)C	9.5	57.6	80
Heidenhain				
85344360	(3 x (2 x 0.14)+2 x (0.5))C	10.5	90.8	110
85344361	(4 x 2 x 0.14+4 x 0.5)C	10.0	66.9	106
85344362	(3 x (2 x 0.14)+2 x (1.0))C	11.0	97.2	134
85344363	(10 x 0.14+2 x 0.5)C	9.0	51.6	76
SEW				
85344370	(5 x 2 x 0.25)C	9.5	57.4	86
85344371	(6 x 2 x 0.25)C	10.1	62.2	98

**) without inner jacket* *[1]) without overall shield*

Life-time up to 10 million cycles with the following parameters: Travel distance 32.81 ft (10 m), bending radius 9.5 x d and temperature +5 °F to +158 °F (-15 °C bis +70 °C)

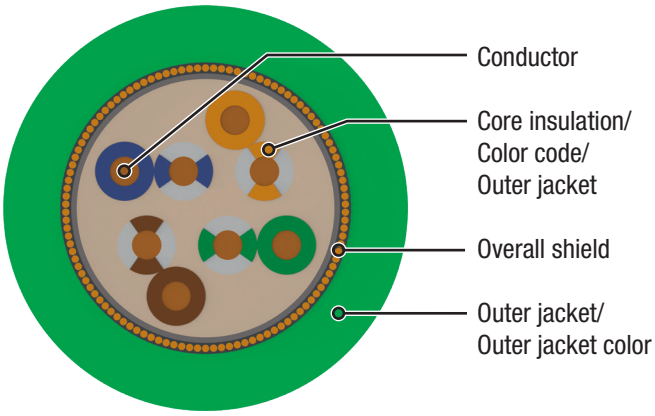
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 611-C CAT5e

Shielded bus cable
for medium mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 65.6 ft (20 m) and more
- Light oil resistance
- Processing units / machine tools, handling, indoor cranes

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	According to bus specification
Core stranding	According to bus specification
Color code	According to bus specification
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 80 % optical coverage
Outer jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant and flame retardant PVC based mixture
Outer jacket color	Yellow green RAL6018
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 611-C CAT5e

Shielded bus cable
for medium mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 60811-2-1
Flame retardant	According to EN 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21371 30V +176 °F (80 °C)
REACH	In accordance with regulation (EC) No 1907/2006 (REACH)
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 12.5 x d
	Flexible	min. 10 x d
	Fixed	min. 7 x d
Temperature	Energy chain linear	+41 °F to +158 °F (+5 °C to +70 °C)
	Flexible	+23 °F to +158 °F (-5 °C to +70 °C) (according to DIN EN 60811-504)
	Fixed	+5 °F to +158 °F (-15 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (3 m/s)
	Gliding	6.56 ft/s (2 m/s)
a max.	98.4 ft/s² (30 m/s²)	
Travel distance	Self-supporting travel distances and in gliding applications 65.6 ft (20 m) and more	

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

SD PVC 611-C CAT5e

Shielded bus cable
for medium mechanical performance

Electrical properties

	Nominal voltage	50 V
	Loop resistance	Max. 280 Ω / km following VDE 0812
	Insulation resistance	Min. 5 GΩ x km at 68 °F (20 °C)
	Operating capacity	Nom. 50 nF / km
	Wave resistance at 100MHz	100 Ohm ± 5 Ω
	Test voltage	700 V / AC

Transmission properties

f in MHz	Attenuation (dB/100m) Nom.	NEXT (DB) Nom.	ACR (dB/100m) Nom.	ELFEXT (dB/100m) Nom.	RL (dB) Nom.
1	0.31	73	73	68	23
4	0.59	65	64	58	26
10	0.93	62	61	51	28
16	1.19	60	59	45	28
20	1.33	58	57	42	28
31.25	1.68	55	53	38	28
62.5	2.44	50	48	34	27
100	3.15	48	45	30	26
155	3.57	46	42	27	25
200	4.12	45	41	23	24

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SD PVC 611-C CAT5e

Shielded bus cable
for medium mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85192040	(4 x (2 x AWG26))C	7.3	27.0	68.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 14.5 x d and temperature between +59 °F to +140 °F (+15 °C bis +60 °C)

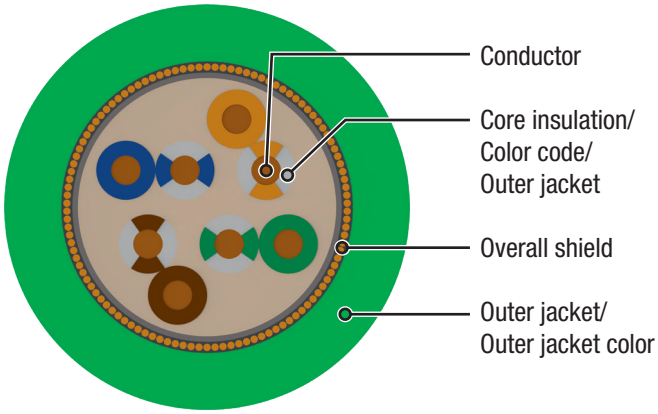
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 622-C CAT5e

Shielded bus cable
for high mechanical performance

Illustrations exemplary



Typical application areas

- Self-supported travel distances and for gliding applications up to 65.6 ft (20 m)
- Very high oil resistance
- Indoor and outdoor applications
- Processing units and machine tools
- Suitable for low temperature handling

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	According to bus specification
Core stranding	According to bus specification
Color code	According to bus specification
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 55 % linear, 80 % optical coverage
Outer jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant, flame retardant and halogen-free PUR based mixture
Outer jacket color	Yellow green RAL6018
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HD PUR 622-C CAT5e

Shielded bus cable
for high mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to IEC 60811-2-1
Flame retardant	According to EN 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
Halogen-free	According to DIN EN 60754-2
UL/CSA	AWM Style 10232 / 21164
REACH	In accordance with regulation (EC) No 1907/2006 (REACH)
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear	min. 12.5 x d
	Flexible	min. 10 x d
	Fixed	min. 7 x d
Temperature	Energy chain linear	-4 °F to +158 °F (-20 °C to +70 °C)
	Flexible	-49 °F to +158 °F (-40 °C to +70 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +158 °F (-50 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (3 m/s)
	Gliding	6.56 ft/s (2 m/s)
a max.	98.4 ft/s² (30 m/s²)	
Travel distance	Self-supported travel distances and for gliding applications up to 65.6 ft (20 m)	

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HD PUR 622-C CAT5e

Shielded bus cable
for high mechanical performance

Electrical properties

	Nominal voltage	50 V
	Loop resistance	Max. 280 Ohm / km according to VDE 0812
	Insulation resistance	Min. 5 Gohm x km at 68 °F (20 °C):
	Operating capacity	Nom. 50 nF / km
	Wave resistance at 100MHz	100 Ohm ± 5 Ω
	Test voltage	700 V/AC

Transmission properties

f in MHz	Attenuation (dB/10m) Nom.	NEXT (DB) Nom.	ACR (dB/10m) Nom.	ELFEXT (dB/10m) Nom.	RL (dB) Nom.
1	0.31	85	85	70	23
4	0.59	77	76	59	26
10	0.93	69	68	53	28
16	1.19	65	64	47	28
20	1.33	63	62	44	28
31.25	1.68	62	60	39	28
62.5	2.44	55	53	36	27
100	3.15	51	48	32	26
155	3.57	47	43	30	25
200	4.12	45	41	25	24

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HD PUR 622-C CAT5e

Shielded bus cable
for high mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85284040	(4 x (2 x AWG26))C	7.8	32.0	65.0

Life-time

up to 10 million cycles with the following parameters: Bending factor 14.5 x d and temperature between +14 °F to + 140 °F (-10 °C bis +60 °C)

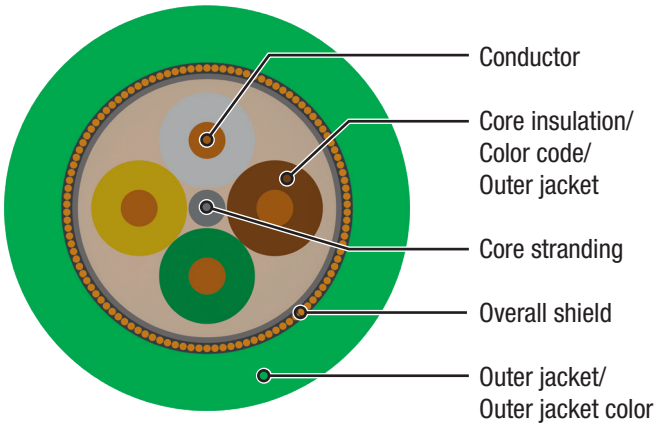
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C Ethercat

Shielded bus cable
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications
- Processing units / machine tools, storage and retrieval machines, packaging industry, quick handling, semiconductor handling, indoor cranes, low temperature applications

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	According to bus specification
Core stranding	According to bus specification
Color code	According to bus specification
Inner jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant and flame retardant TPE based mixture
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant, flame retardant TPE based mixture
Outer jacket color	Yellow green RAL6018
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C Ethercat

Shielded bus cable
for highest mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 60811-2-1
Flame retardant	According to EN 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21371 30V +176 °F (80 °C)
REACH	In accordance with regulation (EC) No 1907/2006 (REACH)
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 10 x d min. 8 x d min. 5 x d
Temperature	Energy chain linear Flexible Fixed	-31°F to +158 °F (-35 °C to +70 °C) -49 °F to +158 °F (-45 °C to +70 °C) (according to DIN EN 60811-504) -58 °F to +158 °F (-50 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supporting travel distances and in gliding applications 1312.34 ft (100 m) and more	

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C Ethercat

Shielded bus cable
for highest mechanical performance

Electrical properties

	Nominal voltage	50 V
	Loop resistance	Max. 180 Ω / km following VDE 0812
	Insulation resistance	Min. 5 GΩ x km at 68 °F (20°C)
	Operating capacity	Nom. 50 nF / km
	Wave resistance at 100MHz	100 Ohm ± 5 Ω
	Test voltage	700 V / AC

Transmission properties

f in MHz	Attenuation (dB/100m) Nom.	NEXT (DB) Nom.	ACR (dB/100m) Nom.	ELFEXT (dB/100m) Nom.	RL (dB) Nom.
1	0.30	73	73	68	23
4	0.58	65	64	58	26
10	0.93	62	61	51	30
16	1.19	60	59	45	30
20	1.32	58	57	42	30
31.25	1.68	55	53	38	30
62.5	2.43	50	48	34	30
100	3.12	48	45	30	28
155	3.52	46	42	27	26
200	3.90	45	41	23	24

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HDplus TPE 633-C Ethercat

Shielded bus cable
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85396030	(4 x 0.25)C	7.1	32.0	66.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 12 x d and temperature between -13 °F to +140 °F (-25 °C bis +60 °C)

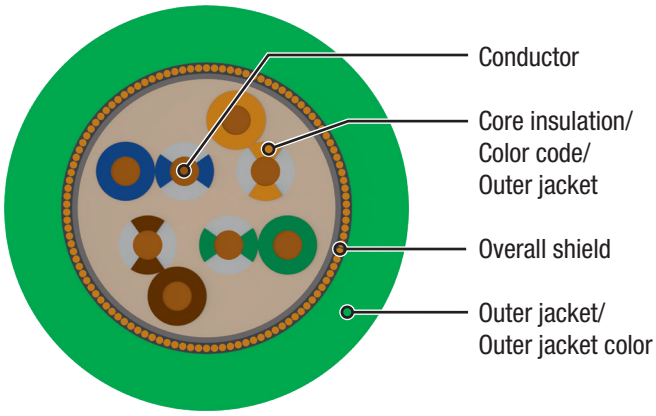
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C CAT6

Shielded bus cable
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications
- Processing units / machine tools, storage and retrieval machines, packaging industry, quick handling, semiconductor handling, indoor cranes, low temperature applications

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	According to bus specification
Core stranding	According to bus specification
Color code	According to bus specification
Inner jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant and flame retardant TPE based mixture
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant, flame retardant TPE based mixture
Outer jacket color	Yellow green RAL6018
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C CAT6

Shielded bus cable
for highest mechanical performance

Properties and approvals

UV resistance	Medium	
Oil resistance	According to DIN EN 60811-2-1	
Flame retardant	According to EN 60332-1-2	
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)	
UL/CSA	AWM Style 21371 30V +176 °F (80 °C)	
REACH	In accordance with regulation (EC) No 1907/2006 (REACH)	
RoHS-II	According to 2011/65/EU	
CE	According to 2014/35/EU	

Dynamic data

Bending radius	Energy chain linear	min. 10 x d
	Flexible	min. 8 x d
	Fixed	min. 5 x d
Temperature	Energy chain linear	-31 °F to +158 °F (-35 °C to +70 °C)
	Flexible	-49 °F to +158 °F (-45 °C to +70 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +158 °F (-50 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more	

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C CAT6

Shielded bus cable
for highest mechanical performance

Electrical properties

	Nominal voltage	50 V
	Loop resistance	Max. 280 Ω / km following VDE 0812
	Insulation resistance	Min. 5 GΩ x km at 68 °F (20°C)
	Operating capacity	Nom. 50 nF / km
	Wave resistance at 100MHz	100 Ohm ± 5 Ω
	Test voltage	700 V / AC

Transmission properties

f in MHz	Attenuation (dB/100m) Nom.	NEXT (DB) Nom.	ACR (dB/100m) Nom.	ELFEXT (dB/100m) Nom.	RL (dB) Nom.
1	0.42	85	85	70	23
4	0.83	77	76	59	26
10	1.37	69	68	53	28
16	1.72	65	63	47	28
20	1.92	63	61	44	28
31.25	2.37	62	60	39	28
62.5	3.27	55	52	36	27
100	4.05	51	47	32	26
155	4.57	47	42	30	25
200	5.12	45	40	25	24

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C CAT6

Shielded bus cable
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85396050	(4 x (2 x AWG26))C	8.5	38.0	84.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 12 x d and temperature between -13 °F to +140 °F (-25 °C bis +60 °C)

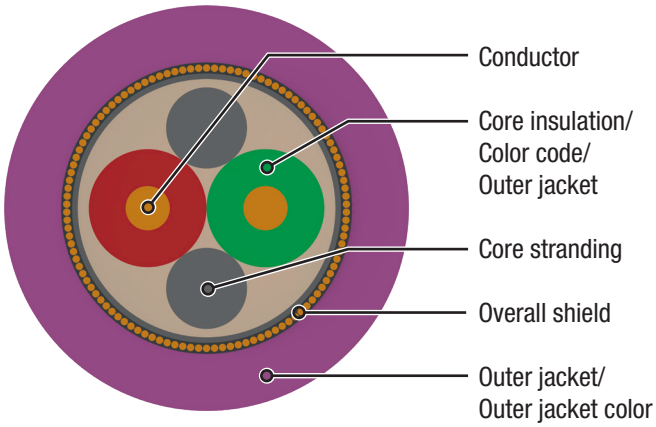
For further information regarding the life-time, please contact your technical advisor.

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C Profibus

Shielded bus cable
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications
- Processing units / machine tools, storage and retrieval machines, packaging industry, quick handling, semiconductor handling, indoor cranes, low temperature applications

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	According to bus specification
Core stranding	According to bus specification
Color code	According to bus specification
Inner jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant and flame retardant TPE based mixture
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant, flame retardant TPE based mixture
Outer jacket color	Red purple RAL4001
Printing	Black

murrSystens. Misprints and errors reserved. Technical changes are possible at any time.

HDplus TPE 633-C Profibus

Shielded bus cable
for highest mechanical performance

Properties and approvals

UV resistance	Medium
Oil resistance	According to DIN EN 60811-2-1
Flame retardant	According to EN 60332-1-2
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)
UL/CSA	AWM Style 21371 30V +176 °F (80 °C)
REACH	In accordance with regulation (EC) No 1907/2006 (REACH)
RoHS-II	According to 2011/65/EU
CE	According to 2014/35/EU

Dynamic data

Bending radius	Energy chain linear Flexible Fixed	min. 10 x d min. 8 x d min. 5 x d
Temperature	Energy chain linear Flexible Fixed	-31 °F to +158 °F (-35 °C to +70 °C) -49 °F to +158 °F (-45 °C to +70 °C) (according to DIN EN 60811-504) -58 °F to +158 °F (-50 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting Gliding	32.81 ft/s (10 m/s) 19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more	

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HDplus TPE 633-C Profibus

Shielded bus cable
for highest mechanical performance

Electrical properties

	Nominal voltage	100 V
	Loop resistance	Max. 150 Ω / km following VDE 0812
	Insulation resistance	Min. 5 GΩ x km at 68 °F (20°C)
	Operating capacity	Nom. 30 nF / km
	Wave resistance at 100MHz	150 Ohm ± 5 Ω
	Test voltage	1000 V / DC

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85396010	(2 x 0.25)C	8.8	34.0	95.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 12 x d and temperature between -13 °F to +140 °F (-25 °C bis +60 °C)

For further information regarding the life-time, please contact your technical advisor.

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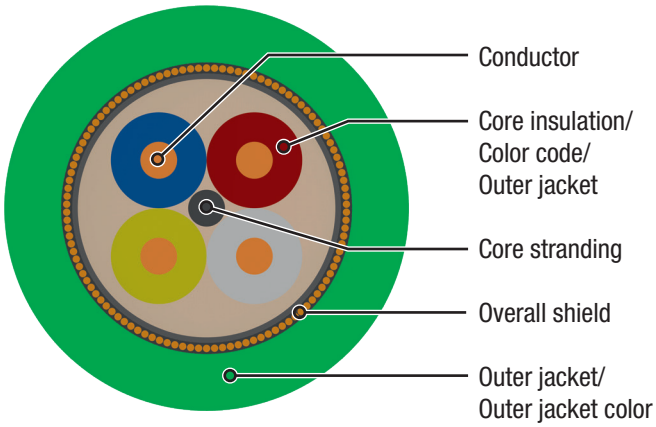
HDplus TPE 633-C Profinet

Shielded bus cable
for highest mechanical performance

Illustrations exemplary



Typical application areas

- Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more
- Very high oil resistance
- Indoor and outdoor applications
- Processing units / machine tools, storage and retrieval machines, packaging industry, quick handling, semiconductor handling, indoor cranes, low temperature applications

Cable structure

Conductor	Stranded wire in a highly flexible design consisting of bare copper wires (According to DIN EN 60228)
Core insulation	According to bus specification
Core stranding	According to bus specification
Color code	According to bus specification
Inner jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant and flame retardant TPE based mixture
Overall shield	Extremely bending-resistant tinned copper braid. Approx. 70% linear, 90% optical coverage
Outer jacket	Developed for energy chains, highly abrasion resistant, low adhesion, oil resistant, flame retardant TPE based mixture
Outer jacket color	Yellow green RAL6018
Printing	Black

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Shielded bus cable
for highest mechanical performance

Properties and approvals

UV resistance	Medium	
Oil resistance	According to DIN EN 60811-2-1	
Flame retardant	According to EN 60332-1-2	
Silicone-free	Free of paint-wetting impairment substances (according to PV 3.10.7 – as of 1992)	
UL/CSA	AWM Style 21371 30V +176 °F (80 °C)	
REACH	In accordance with regulation (EC) No 1907/2006 (REACH)	
RoHS-II	According to 2011/65/EU	
CE	According to 2014/35/EU	

Dynamic data

Bending radius	Energy chain linear	min. 10 x d
	Flexible	min. 8 x d
	Fixed	min. 5 x d
Temperature	Energy chain linear	-31 °F to +158 °F (-35 °C to +70 °C)
	Flexible	-49 °F to +158 °F (-45 °C to +70 °C) (according to DIN EN 60811-504)
	Fixed	-58 °F to +158 °F (-50 °C to +70 °C) (according to DIN EN 50305)
v max.	Self-supporting	32.81 ft/s (10 m/s)
	Gliding	19.69 ft/s (6 m/s)
a max.	328.1 ft/s² (100 m/s²)	
Travel distance	Self-supporting travel distances and in gliding applications 1312.34 ft (400 m) and more	

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Shielded bus cable
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Electrical properties

	Nominal voltage	50 V
	Loop resistance	Max. 120 Ω / km following VDE 0812
	Insulation resistance	Min. 5 GΩ x km at 68 °F (20°C)
	Operating capacity	Nom. 50 nF / km
	Wave resistance at 100MHz	100 Ohm ± 5 Ω
	Test voltage	700 V / DC

Transmission properties

f in MHz	Attenuation (dB/100m) Nom.	NEXT (DB) Nom.	ACR (dB/100m) Nom.	ELFEXT (dB/100m) Nom.	RL (dB) Nom.
1	1.9	75	73.1	69	-
4	3.7	65	61.3	57	25.0
10	5.8	60	54.2	50	30.0
16	7.6	54	46.4	46	30.0
20	8.6	52	41.4	44	30.0
31.25	11.0	49	38.0	40	28.5
62.5	16.3	47	30.7	34	27.0
100	20.9	45	24.1	30	24.0

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HDplus TPE 633-C Profinet

Shielded bus cable
for highest mechanical performance

Technical information

Order No.	Number of wires/cross section [mm²]	Ø max. [mm]	Copper number [kg/km]	Weight [kg/km]
85396020	(4 x AWG22)C	7.4	38.0	80.0

Life-time up to 10 million cycles with the following parameters:
Bending factor 12 x d and temperature between -13 °F to +140 °F (-25 °C bis +60 °C)

For further information regarding the life-time, please contact your technical advisor.

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