

Electric cables.



ARISTONCAVI

MINING & TUNNELLING

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Electric cables for mining and tunnelling.



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Medium voltage cables.

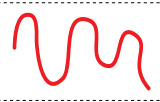
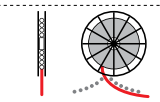
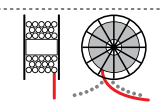
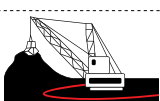
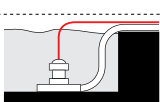
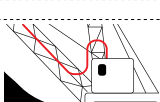
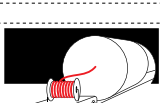
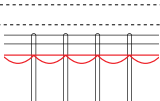
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Low voltage cables

Medium voltage cables

		HD FLEX	SNAKEFLEX	SNAKEFLEX FC	PURFLEX HF (C)	URSUS® MT SC PLUS	URSUS® MT PLUS	URSUS® MT FO	URSUS® MT MIN PLUS	URSUS® MT MIN-E PLUS	URSUS® MT MIN PUR HF PLUS
		  	  	  	  						
Mobile laying											
Monospiral drum											
Cylindric drum											
Trailing operation in mining and tunnelling											
Trailing operation in mining and tunnelling, submersible											
Trailing operation of dredgers and floating docks											
Fixed installation on equipment											
Tunnel boring machines power supply											
Fixed, temporary installation for material handling equipment & tunnels											

 Main application

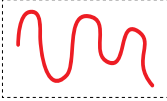
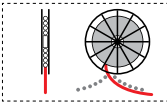
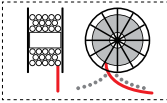
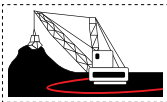
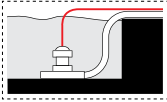
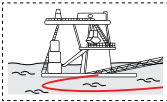
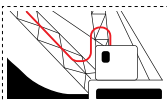
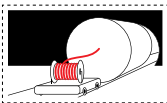
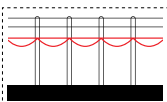
 Suitable for use

 Open cast mining

 Underground mining

 Tunnelling

Medium voltage cables

	URSUS® MT MIN GC	URSUS® MT MIN F PLUS	URSUS® MT MIN F-E PLUS	URSUS® MT SUB PLUS	URSUS® MT SUB-E PLUS	URSUS® MT BM PLUS	URSUS® MT BM PUR HF PLUS	URSUS® MT TUNNEL V PLUS	URSUS® MT TUNNEL V ATOX PLUS	URSUS® MT TUNNEL I PLUS		
				 	 			 	 	 		
												Mobile laying
												Monospiral drum
												Cylindric drum
												Trailing operation in mining and tunnelling
												Trailing operation in mining and tunnelling, submersible
												Trailing operation of dredgers and floating docks
												Fixed installation on equipment
												Tunnel boring machines power supply
												Fixed, temporary installation for material handling equipment & tunnels

*Low voltage
cables.*

HD FLEX

SNAKEFLEX

SNAKEFLEX FC

PURFLEX HF (C)

HD FLEX 0,6/1 kV

Based on DIN VDE 0250 Part 812

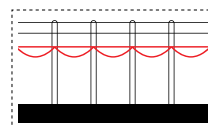
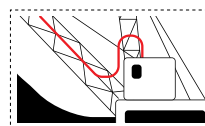
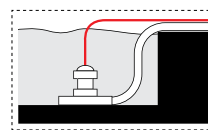
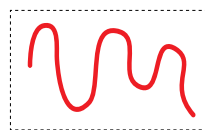


Cable construction

① Phase Conductors	Conductor material	Flexible bare copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
② Insulation	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Nominal thickness	According to VDE 0250 Part 812
Cores identification		According to VDE 0293 Part 308 (HD 308)
③ Inner Sheath	Material	Special rubber compound
④ Outer Sheath	Material	Special heavy duty rubber compound 5GM5 quality, according to VDE 0207 Part 21
	Colour	Black



Main applications



Applications Flexible cable, rubber sheathed, suitable for mining application alongside conveyor belts, for energy supply of equipment in movement, industrial apparatus and submersed pumps. It's resistant to the abrasion and oils, flame retardant.

Electrical working data

Nominal rated voltage U_0 / U	kV 0,6/1
Test voltage	kV 3
Max AC voltage	kV 0,7/1,2
Max DC voltage	kV 1,8
Current rating	A According to VDE 0298 Part 4

Thermal working data

Maximum short circuit temperature	°C 250
Maximum working temp. on the conductor	°C 90
Ambient temperature: mobile condition	°C - 25 to + 80
Ambient temperature: static condition	°C - 40 to + 80

Mechanical working data

Bending radius	mm According to VDE 0298 Part 3
Maximum tensile load*	N/mm ² 15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Weather resistance	For indoor and outdoor application

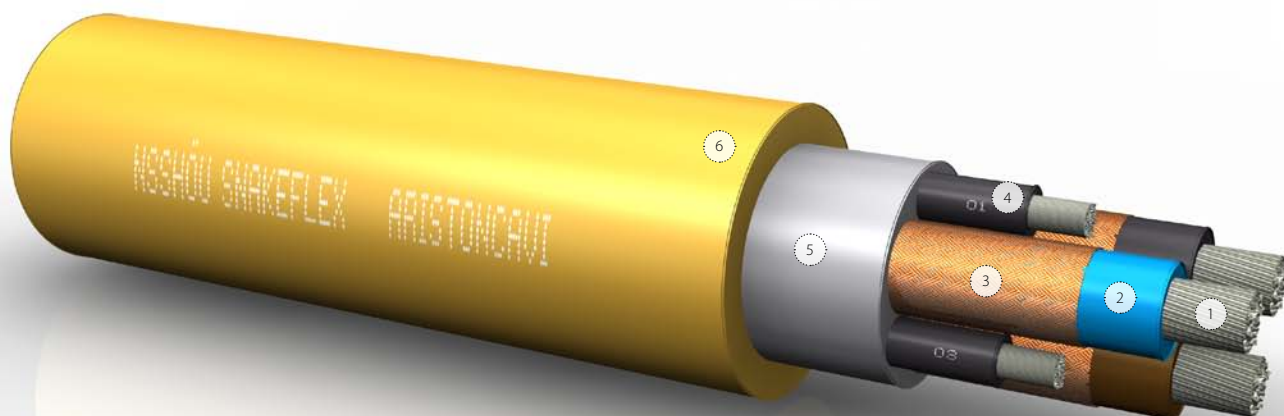
HD FLEX 0,6/1 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	3x1,5	1,5	9,7	10,3	141	68
0,6/1	3x2,5	1,9	11,1	11,7	200	113
0,6/1	3x4	2,4	13,2	13,8	297	180
0,6/1	3x6	2,9	14,4	15,0	381	270
0,6/1	3x10	3,8	17,4	18,5	590	450
0,6/1	3x16	4,8	19,5	20,6	797	720
0,6/1	3x25	6,1	23,7	24,8	1206	1125
0,6/1	3x35	7,2	26,6	27,7	1649	1575
0,6/1	3x50	8,9	31,8	33,0	2195	2250
0,6/1	3x70	10,6	35,3	36,5	3124	3150
0,6/1	3x95	12,3	40,9	42,6	4100	4275
0,6/1	3x120	13,8	43,4	45,1	4723	5400
0,6/1	3x150	15,5	47,8	49,5	5916	6750
0,6/1	3x185	17,0	53,1	55,4	7271	8325
0,6/1	3x50 + 3x25/3	8,9	32,3	33,5	2481	2250
0,6/1	3x70 + 3x35/3	10,6	35,7	37,4	3319	3150
0,6/1	3x95 + 3x50/3	12,3	41,5	43,2	4324	4275
0,6/1	3x120 + 3x70/3	13,8	45,0	46,7	5476	5400
0,6/1	3x150 + 3x70/3	15,5	49,5	51,3	6468	6750
0,6/1	3x185 + 3x95/3	17,0	54,9	57,2	8298	8325
0,6/1	3x240 + 3x120/3	19,5	60,9	63,2	10473	10800

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	4x1,5	1,5	10,5	11,1	173	90
0,6/1	4x2,5	1,9	12,9	13,5	274	150
0,6/1	4x4	2,4	14,3	14,9	356	240
0,6/1	4x6	2,9	15,7	16,3	459	360
0,6/1	4x10	3,8	19,1	20,2	729	600
0,6/1	4x16	4,8	22,0	23,1	1038	960
0,6/1	4x25	6,1	27,0	28,1	1576	1500
0,6/1	4x35	7,2	29,2	30,4	2078	2100
0,6/1	4x50	8,9	35,0	36,2	2967	3000
0,6/1	4x70	10,6	38,8	40,5	3931	4200
0,6/1	4x95	12,3	45,1	46,8	5165	5700
0,6/1	4x120	13,8	50,0	51,8	6152	7200
0,6/1	4x150	15,5	55,0	57,3	7537	9000
0,6/1	4x185	17,0	61,0	63,3	9420	11100
0,6/1	5x1,5	1,5	11,4	12,0	214	113
0,6/1	5x2,5	1,9	14,0	14,6	328	188
0,6/1	5x4	2,4	15,6	16,2	434	300
0,6/1	5x6	2,9	17,5	18,6	594	450
0,6/1	5x10	3,8	20,9	22,0	898	750
0,6/1	5x16	4,8	24,1	25,2	1283	1200
0,6/1	5x25	6,1	29,6	30,8	1965	1875
0,6/1	7x1,5	1,5	14,5	15,1	313	158
0,6/1	12x1,5	1,5	16,8	17,4	422	270
0,6/1	18x1,5	1,5	19,4	20,5	613	405
0,6/1	24x1,5	1,5	20,9	22,0	752	540
0,6/1	7x2,5	1,9	16,8	17,4	461	263
0,6/1	12x2,5	1,9	19,5	20,6	653	450
0,6/1	18x2,5	1,9	23,3	24,4	922	675
0,6/1	24x2,5	1,9	25,2	26,3	1147	900

SNAKEFLEX 0,6/1kV

DIN VDE 0250 Part 812 approved

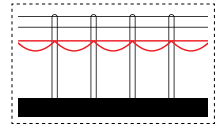
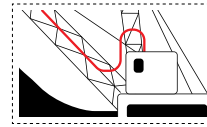
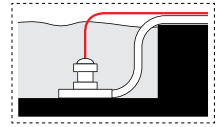
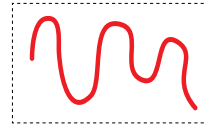


Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
② Insulation	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Nominal thickness	According to VDE 0250 Part 812
Cores identification		According to VDE 0293 Part 308 (HD 308)
③ Individual core screen (if present)	Material	Bare copper
	Construction	Copper braid up to 10 mm ² , copper wires from 16 mm ²
④ Control conductors (if present)	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
⑤ Inner Sheath	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Material	Rubber compound GM1b quality, according to VDE 0207 Part 21
⑥ Outer Sheath	Material	Rubber compound 5GM5 quality, according to VDE 0207 Part 21
	Colour	Yellow



Main applications



Applications Heavy duty tough rubber flexible cable with or without individually earth screened cores for dynamic or static applications and in aggressive environments. Flame retardant, abrasion, cut, notch and tear resistant. Good resistance to oil and fats. SNAKEFLEX is suitable for installation inside or outside in dry, damp or wet environments and in hazardous environments (subject to local regulations). For power supplies and controlling in mines, quarries, industrial plants, ports, infrastructure, agriculture and mobile equipment where high levels of mechanical stress and abrasion are expected. SNAKEFLEX can be permanently submersed in fresh water, salt water, waste water, storm water, oily water and sewage contaminated water to a depth of 100 meters.

Electrical working data

Nominal rated voltage U_0 / U	kV 0,6/1
Test voltage	kV 3
Max AC voltage	kV 0,7/1,2
Max DC voltage	kV 1,8
Current rating	A According to VDE 0298 Part 4

Thermal working data

Maximum short circuit temperature	°C 250
Maximum working temp. on the conductor	°C 90
Ambient temperature: mobile condition	°C - 25 to + 80
Ambient temperature: static condition	°C - 40 to + 80

Mechanical working data

Bending radius	mm According to VDE 0298 Part 3
Submersible	m 100
Maximum tensile load*	N/mm ² 15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Behaviour in water	HD 22.16 and AC internal test, suitable for immersion in salt and brackish water
Weather resistance	For indoor and outdoor application

SNAKEFLEX 0,6/1kV NSSHÖU O/J

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	1x1,5	1,5	6,3	7,0	60	23
0,6/1	1x2,5	1,9	7,0	7,7	75	38
0,6/1	1x4	2,4	7,6	8,3	95	60
0,6/1	1x6	2,9	8,2	8,9	120	90
0,6/1	1x10	3,8	9,5	10,2	180	150
0,6/1	1x16	4,8	10,5	11,2	245	240
0,6/1	1x25	6,1	13,0	13,7	375	375
0,6/1	1x35	7,2	14,1	14,8	480	525
0,6/1	1x50	8,9	16,2	16,9	660	750
0,6/1	1x70	10,6	18,3	19,0	875	1050
0,6/1	1x95	12,5	20,5	21,7	1150	1425
0,6/1	1x120	14,2	22,8	24,0	1430	1800
0,6/1	1x150	15,9	25,0	26,2	1750	2250
0,6/1	1x185	17,7	28,2	29,4	2180	2775
0,6/1	1x240	20,1	31,1	32,3	2770	3600
0,6/1	1x300	22,5	34,9	36,1	3510	4500
0,6/1	3x1,5	1,5	11,7	12,3	190	68
0,6/1	3x2,5	1,9	13,1	13,7	255	113
0,6/1	3x4	2,4	15,6	16,2	375	180
0,6/1	3x6	2,9	16,8	17,4	465	270
0,6/1	3x10	3,8	20,2	21,3	710	450
0,6/1	3x16	4,8	22,3	23,4	930	720
0,6/1	3x25	6,1	26,9	28,0	1390	1125
0,6/1	3x35	7,2	30,2	31,4	1880	1575
0,6/1	3x50	8,9	35,8	37,0	2500	2250
0,6/1	3x70	10,6	39,3	40,5	3460	3150
0,6/1	3x95	12,5	45,7	47,4	4570	4275
0,6/1	3x120	14,2	48,2	49,9	5220	5400
0,6/1	3x150	15,9	52,6	54,4	6460	6750
0,6/1	3x185	17,7	58,7	61,0	7980	8325

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	3x50 + 3x25/3	8,9	36,3	37,5	2790	2250
0,6/1	3x70 + 3x35/3	10,6	39,7	41,4	3660	3150
0,6/1	3x95 + 3x50/3	12,5	46,3	48,0	4800	4275
0,6/1	3x120 + 3x70/3	14,2	48,5	50,3	5990	5400
0,6/1	3x150 + 3x70/3	15,9	54,3	56,1	7030	6750
0,6/1	3x185 + 3x95/3	17,7	61,7	64,0	9030	8325
0,6/1	3x240 + 3x120/3	20,1	66,5	68,8	11280	10800
0,6/1	4x1,5	1,5	12,5	13,1	225	90
0,6/1	4x2,5	1,9	15,3	15,9	350	150
0,6/1	4x4	2,4	16,7	17,3	440	240
0,6/1	4x6	2,9	18,1	18,7	550	360
0,6/1	4x10	3,8	21,9	23,0	860	600
0,6/1	4x16	4,8	25,2	26,3	1210	960
0,6/1	4x25	6,1	30,6	31,8	1810	1500
0,6/1	4x35	7,2	32,8	34,0	2330	2100
0,6/1	4x50	8,9	39,0	40,2	3300	3000
0,6/1	4x70	10,6	42,8	44,5	4300	4200
0,6/1	4x95	12,5	49,9	51,7	5680	5700
0,6/1	4x120	14,2	55,6	57,4	6820	7200
0,6/1	4x150	15,9	60,6	62,9	8270	9000
0,6/1	4x185	17,7	67,4	69,7	10350	11100
0,6/1	5x1,5	1,5	13,4	14,0	270	113
0,6/1	5x2,5	1,9	16,4	17,0	410	188
0,6/1	5x4	2,4	18,0	18,6	525	300
0,6/1	5x6	2,9	20,3	21,4	715	450
0,6/1	5x10	3,8	23,7	24,8	1040	750
0,6/1	5x16	4,8	27,3	28,4	1470	1200
0,6/1	5x25	6,1	33,2	34,4	2220	1875

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	7x1,5	1,5	16,9	17,5	400	158
0,6/1	12x1,5	1,5	19,6	20,2	540	270
0,6/1	18x1,5	1,5	22,2	23,3	750	405
0,6/1	24x1,5	1,5	23,7	25,1	900	540
0,6/1	7x2,5	1,9	19,2	19,8	560	263
0,6/1	12x2,5	1,9	22,3	23,4	790	450
0,6/1	18x2,5	1,9	26,5	27,6	1110	675
0,6/1	24x2,5	1,9	28,4	29,6	1350	900

SNAKEFLEX 0,6/1kV NSSHÖU...../3E



Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	3x2,5 + 3x2,5/3E	1,9	16,2	16,9	370	113
0,6/1	3x4 + 3x4/3E	2,4	17,7	18,4	490	180
0,6/1	3x6 + 3x6/3E	2,9	18,9	19,6	590	270
0,6/1	3x10 + 3x10/3E	3,8	22,4	23,5	890	450
0,6/1	3x16 + 3x16/3E	4,8	26,6	27,7	1260	720
0,6/1	3x25 + 3x16/3E	6,1	29,9	31,1	1700	1125
0,6/1	3x35 + 3x16/3E	7,2	33,9	35,1	2100	1575
0,6/1	3x50 + 3x25/3E	8,9	39,8	41,5	3060	2250
0,6/1	3x70 + 3x35/3E	10,6	43,4	45,1	3940	3150
0,6/1	3x95 + 3x50/3E	12,5	50,0	51,8	5240	4275
0,6/1	3x120 + 3x70/3E	14,2	54,1	55,9	6580	5400
0,6/1	3x150 + 3x70/3E	15,9	59,7	62,0	7590	6750
0,6/1	3x185 + 3x95/3E	17,7	66,1	68,4	9400	8325

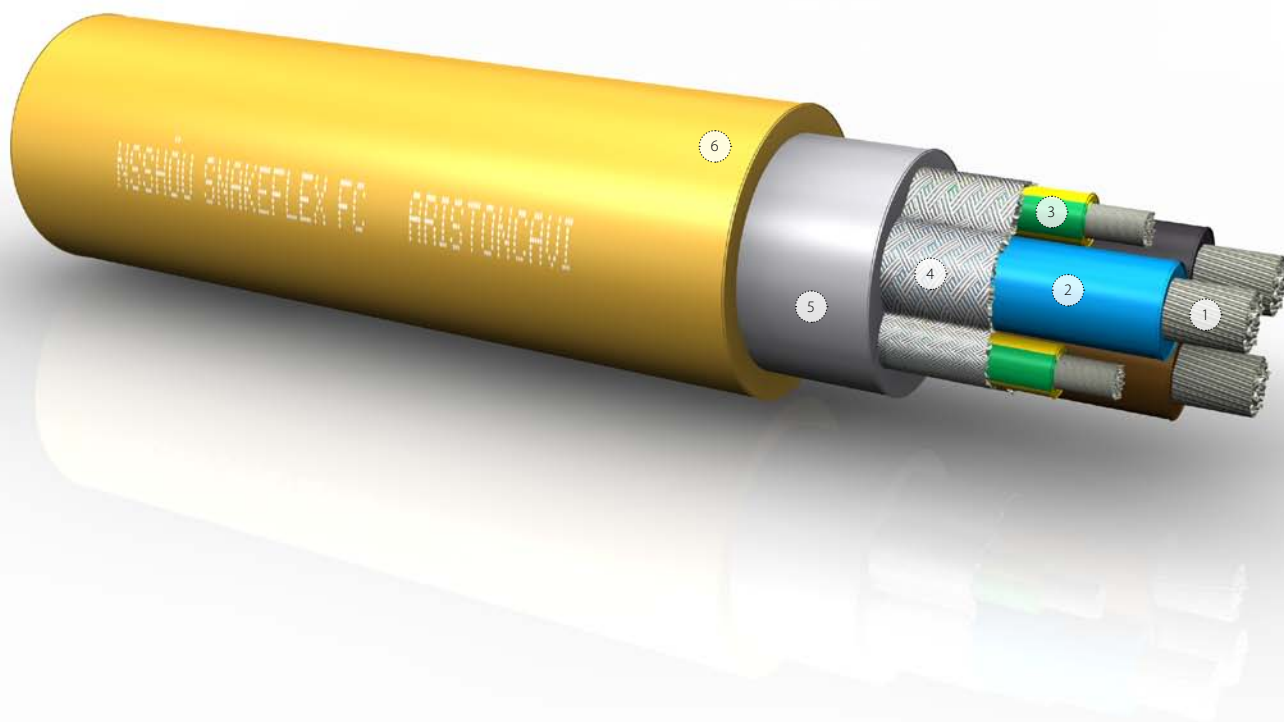
SNAKEFLEX 0,6/1kV NSSHÖU...../3E.....+ ST



Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	3x2,5 + 3x2,5/3E + 3x1,5ST	1,9	16,2	18,1	425	113
0,6/1	3x4 + 3x4/3E + 3x1,5ST	2,4	17,7	19,6	540	180
0,6/1	3x6 + 3x6/3E + 3x1,5ST	2,9	18,9	20,3	640	270
0,6/1	3x10 + 3x10/3E + 3x2,5ST	3,8	22,4	23,5	940	450
0,6/1	3x16 + 3x16/3E + 3x2,5ST	4,8	26,6	27,7	1310	720
0,6/1	3x25 + 3x16/3E + 3x2,5ST	6,1	29,9	31,1	1800	1125
0,6/1	3x35 + 3x16/3E + 3x2,5ST	7,2	33,9	35,1	2230	1575
0,6/1	3x50 + 3x25/3E + 3x2,5ST	8,9	39,8	41,5	3160	2250
0,6/1	3x70 + 3x35/3E + 3x2,5ST	10,6	43,4	45,1	4210	3150
0,6/1	3x95 + 3x50/3E + 3x2,5ST	12,5	50,0	51,8	5520	4275
0,6/1	3x120 + 3x70/3E + 3x2,5ST	14,2	54,1	55,9	6730	5400
0,6/1	3x150 + 3x70/3E + 3x2,5ST	15,9	59,7	62,0	7740	6750
0,6/1	3x185 + 3x95/3E + 3x2,5ST	17,7	66,1	68,4	9700	8325

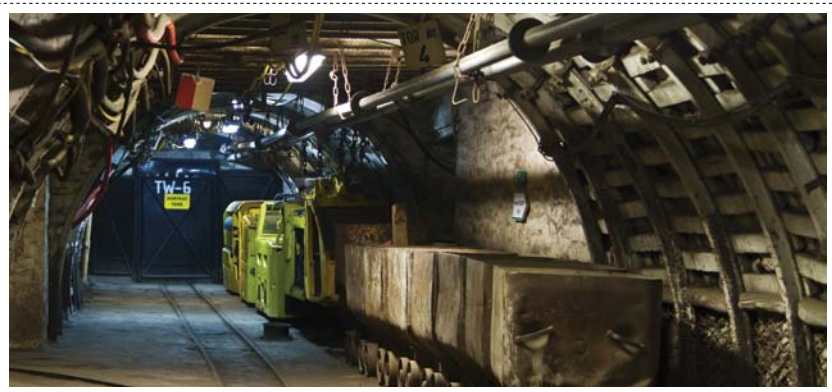
SNAKEFLEX FC 0,6/1 kV

Based on DIN VDE 0250 Part 812

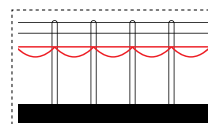
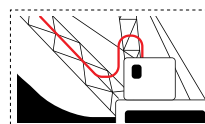
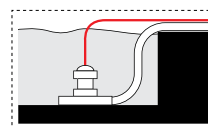
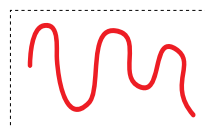


Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
② Insulation	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Nominal thickness	According to VDE 0250 Part 812
Cores identification		According to VDE 0293 Part 308 (HD 308)
③ Earth Conductors	Material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
④ Overall Screen	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Material	Tinned copper
⑤ Inner Sheath	Construction	Copper braid
	Material	Rubber compound GM1b quality, according to VDE 0207 Part 21
⑥ Outer Sheath	Material	Rubber compound 5GM5 quality, according to VDE 0207 Part 21
	Colour	Yellow



Main applications



Applications Heavy duty tough rubber flexible cable for dynamic or static applications and in aggressive environments. Flame retardant, abrasion, cut, notch and tear resistant. Good resistance to oil and fats. SNAKEFLEX FC is suitable for installation inside or outside in dry, damp or wet environments and in hazardous environments (subject to local regulations). For power supplies and controlling in mines, quarries, industrial plants, ports, infrastructure, agriculture and mobile equipment where high levels of mechanical stress and abrasion are expected. The overall screen provides a high level of electrical safety with EMC protection and makes the cable especially suitable for frequency converter controlled drives. SNAKEFLEX FC can be permanently submersed in fresh water, salt water, waste water, storm water, oily water and sewage contaminated water to a depth of 100 meters.

Electrical working data

Nominal rated voltage U_0 / U	kV 0,6/1
Test voltage	kV 3
Max AC voltage	kV 0,7/1,2
Max DC voltage	kV 1,8
Current rating	A According to VDE 0298 Part 4

Thermal working data

Maximum short circuit temperature	°C 250
Maximum working temp. on the conductor	°C 90
Ambient temperature: mobile condition	°C - 25 to + 80
Ambient temperature: static condition	°C - 40 to + 80

Mechanical working data

Bending radius	mm According to VDE 0298 Part 3
Submersible	m 100
Maximum tensile load*	N/mm ² 15

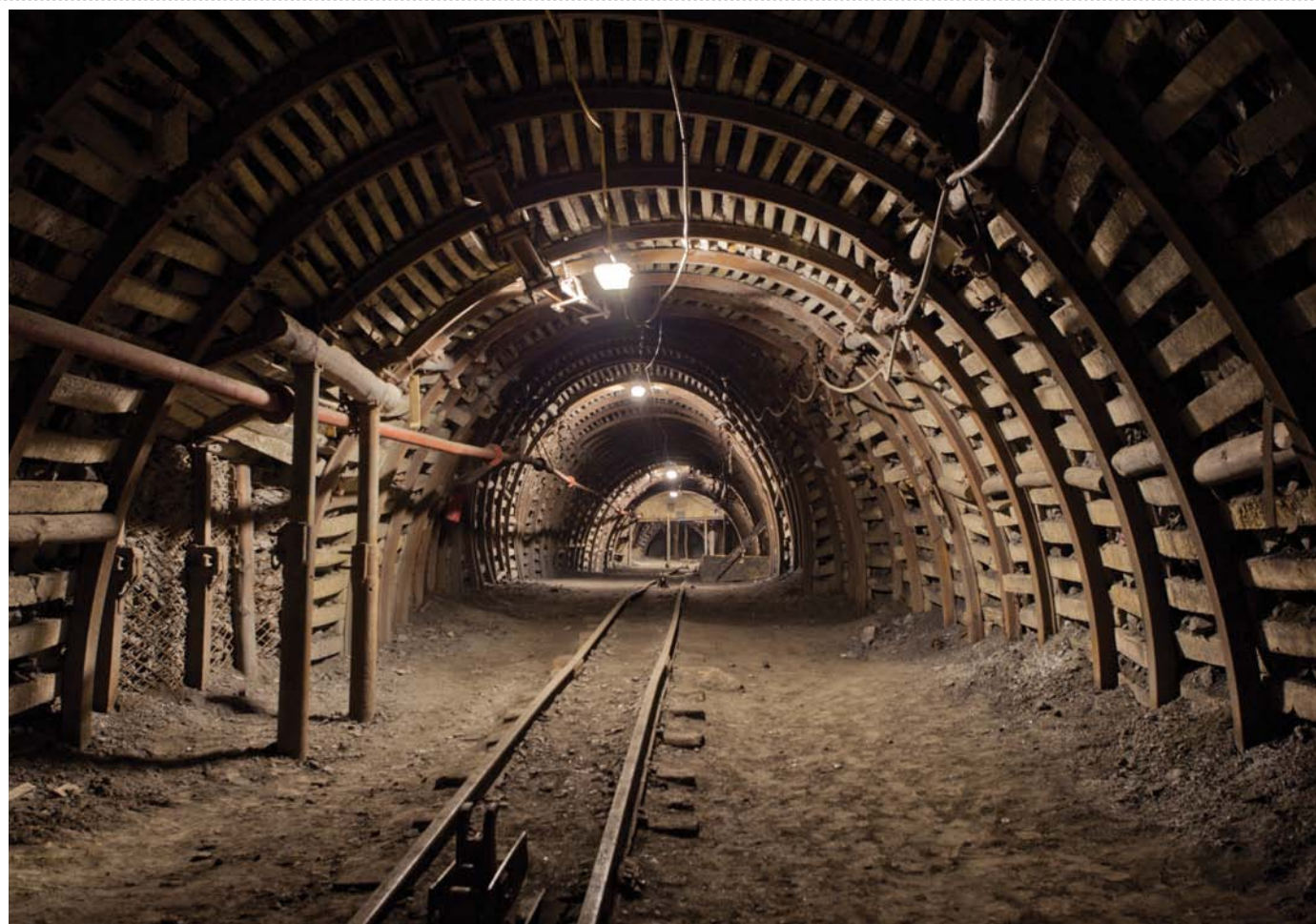
* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Weather resistance	For indoor and outdoor application

SNAKEFLEX FC 0,6/1 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Screen cross section (approx)	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	mm ²	kg/km	N
0,6/1	3x16 + 3x2,5	4,8	24,6	27,1	12	1170	720
0,6/1	3x25 + 3x4	6,1	28,4	31,1	15	1650	1125
0,6/1	3x35 + 3x16/3	7,2	31,9	33,6	22	2200	1575
0,6/1	3x50 + 3x25/3	8,9	37,6	39,3	25	3110	2250
0,6/1	3x70 + 3x35/3	10,6	41,4	44,2	30	3990	3150
0,6/1	3x95 + 3x50/3	12,5	47,7	49,4	34	5080	4275
0,6/1	3x120 + 3x70/3	14,2	51,6	53,4	38	6250	5400
0,6/1	3x150 + 3x70/3	15,9	56,5	58,3	53	7450	6750
0,6/1	3x185 + 3x95/3	17,7	62,4	64,4	59	9200	8325
0,6/1	3x240 + 3x120/3	20,1	68,4	71,3	67	11700	10800



PURFLEX HF (C) 0,6/1 kV

Based on AC specifications

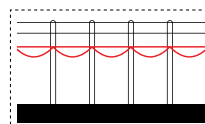
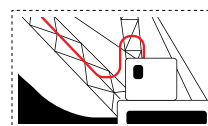
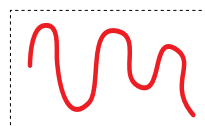


Cable construction

①	Phase Conductors	Conductor material	Flexible bare copper
		Conductor construction	Class 5 VDE 0295 (IEC 60228)
②	Insulation	Insulation material	EPR based compound
		Cores identification	According to VDE 0293 Part 308 (HD 308)
③	Inner Sheath	Material	Rubber filler
④	Overall screen (if present)	Material	Bare copper
		Construction	Braid (min. coverage 70%)
		Material	HFFR Halogen Free Flame Retardant polyurethane
④	Outer Sheath	Material	HFFR Halogen Free Flame Retardant polyurethane
		Colour	Orange



Main applications



Applications Highly flexible, halogen free polyurethane sheathed cable, for use in dry or wet environments. Suitable for application where mechanical stress and abrasion are expected. Examples: power leads for electric tools such as drills, disk saws and for portable motors and generators on building sites, in industry, or equipment with vibrations and in agriculture, mines, ports and naval sites. Also suitable for permanent low temperature application in cold rooms and for situations where the cable is subjected to strong abrasion and tearing stress. The halogen free characteristic makes it suitable for use in closed or confined areas, like tunnel drilling and underground mining sites.

Electrical working data

Nominal rated voltage U_0 / U	kV 0,6/1
Test voltage	kV 4
Max AC voltage	kV 0,7/1,2
Max DC voltage	kV 1,8
Current rating	A According to VDE 0298 Part 4

Thermal working data

Maximum short circuit temperature	°C 250
Maximum working temp. on the conductor	°C 90
Ambient temperature: mobile condition	°C - 25 to + 80
Ambient temperature: static condition	°C - 50 to + 80

Mechanical working data

Bending radius	mm According to VDE 0298 Part 3
Maximum tensile load*	N/mm ² 15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2 Halogen free according to IEC 60754-1 and IEC 60754-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Weather resistance	For indoor and outdoor application

PURFLEX HF 0,6/1 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	1x1,5	1,5	5,9	6,6	50	23
0,6/1	1x2,5	1,9	6,6	7,3	66	38
0,6/1	1x4	2,4	7,2	7,9	84	60
0,6/1	1x6	2,9	7,8	8,5	107	90
0,6/1	1x10	3,8	9,1	9,8	159	150
0,6/1	1x16	4,8	10,3	11,0	222	240
0,6/1	1x25	6,1	11,9	12,6	418	375
0,6/1	1x35	7,2	13,0	13,7	591	525
0,6/1	1x50	8,9	15,3	16,0	794	750
0,6/1	1x70	10,6	16,7	17,4	319	1050
0,6/1	1x95	12,3	19,4	20,1	1044	1425
0,6/1	1x120	13,8	21,0	22,2	2018	1800
0,6/1	1x150	15,5	23,4	24,6	1298	2250
0,6/1	1x185	17,0	25,8	27,0	1646	2775
0,6/1	1x240	19,5	28,8	30,0	2573	3600
0,6/1	1x300	22,2	31,8	33,0	3200	4500
0,6/1	3x50 + 3x25/3	8,9	32,3	33,5	2750	2250
0,6/1	3x70 + 3x35/3	10,6	36,3	37,5	3646	3150
0,6/1	3x95 + 3x50/3	12,3	41,7	42,9	4762	4275
0,6/1	3x120 + 3x70/3	13,8	45,6	47,3	5993	5400
0,6/1	3x150 + 3x70/3	15,5	50,8	52,6	7132	6750
0,6/1	3x185 + 3x95/3	17,0	56,0	57,8	9089	8325
0,6/1	3x240 + 3x120/3	19,5	63,0	65,3	11486	10800

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	4x1,5	1,5	10,1	10,7	162	90
0,6/1	4x2,5	1,9	11,7	12,3	236	150
0,6/1	4x4	2,4	13,7	14,3	336	240
0,6/1	4x6	2,9	15,5	16,1	449	360
0,6/1	4x10	3,8	20,0	21,1	752	600
0,6/1	4x16	4,8	22,5	23,6	1042	960
0,6/1	4x25	6,1	27,4	28,5	1555	1500
0,6/1	4x35	7,2	30,3	31,5	2022	2100
0,6/1	4x50	8,9	35,9	37,1	2884	3000
0,6/1	4x70	10,6	40,5	42,2	3885	4200
0,6/1	4x95	12,3	46,5	48,2	5114	5700
0,6/1	4x120	13,8	51,0	52,8	6322	7200
0,6/1	4x150	15,5	57,0	58,8	7840	9000
0,6/1	4x185	17,0	62,7	65,0	9700	11100

PURFLEX HF C 0,6/1 kV



Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
0,6/1	3x16 + 3x2,5	4,8	23,9	25,9	1020	720
0,6/1	3x25 + 3x4	6,1	27,9	30,1	1450	1125
0,6/1	3x35 + 3x16/3	7,2	30,6	32,9	1880	1575
0,6/1	3x50 + 3x25/3	8,9	35,5	38,0	2650	2250
0,6/1	3x70 + 3x35/3	10,6	39,7	42,8	3580	3150
0,6/1	3x95 + 3x50/3	12,3	44,9	48,3	4500	4275
0,6/1	3x120 + 3x70/3	13,8	49,0	52,5	5650	5400
0,6/1	3x150 + 3x70/3	15,5	55,1	58,9	6870	6750
0,6/1	3x185 + 3x95/3	17,0	60,1	64,6	8450	8325
0,6/1	3x240 + 3x120/3	19,5	66,9	71,7	10900	10800

Medium voltage cables.

URSUS® MT SC PLUS

URSUS® MT PLUS

URSUS® MT FO

URSUS® MT MIN PLUS

URSUS® MT MIN-E PLUS

URSUS® MT MIN PUR HF PLUS

URSUS® MT MIN GC

URSUS® MT MIN F PLUS

URSUS® MT MIN F-E PLUS

URSUS® MT SUB PLUS

URSUS® MT SUB-E PLUS

URSUS® MT BM PLUS

URSUS® MT BM PUR HF PLUS

URSUS® MT TUNNEL V PLUS

URSUS® MT TUNNEL V ATOX PLUS

URSUS® MT TUNNEL I PLUS

URSUS® MT SC PLUS 3,6/6 – 18/30 kV

Based on DIN VDE 0250 Part 813



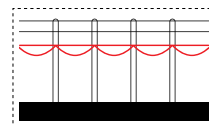
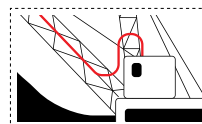
Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Earth Conductor	Material	Bare copper
	Construction	Copper wire screen
③ Outer Sheath	Material	compound 5GM5 quality, according to VDE 0207 Part 21
	Colour	Red

Upon request:
URSUS® MT SCB PLUS version with bare copper braid earth conductor.



Main applications



Applications Medium voltage rubber sheathed flexible cable, single-core, normally used for short-length connections of transformers and switchgears, as well as power cables on mining equipment and alongside conveyor belts.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20	18/30
Test voltage	kV	11	17	24	29	43
Max AC voltage	kV	4/7,2	6,9/12	10,4/18	13,9/24	20,8/36
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation					
Current rating A	A According to VDE 0298 Part 4					

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load	N/mm ²	15

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2	
Resistance to oil	According to IEC 60811-2-1	
Ozone resistance	According to IEC 60811-2-1	
Weather resistance	For indoor and outdoor application	

URSUS® MT SC PLUS 3,6/6 – 18/30 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	1x25/16	6,8	19,3	20,3	730	375
3,6/6	1x35/16	7,8	20,5	22,4	860	525
3,6/6	1x50/16	9,4	22,0	23,9	1030	750
3,6/6	1x70/16	11,2	23,8	25,7	1260	1050
3,6/6	1x95/16	12,7	26,4	28,3	1550	1425
3,6/6	1x120/16	14,4	28,2	30,2	1840	1800
3,6/6	1x150/25	16,3	30,6	32,6	2280	2250
3,6/6	1x185/25	17,6	32,5	34,5	2630	2775
3,6/6	1x240/25	20,6	35,6	37,6	3270	3600
6/10	1x25/16	6,8	19,3	20,9	770	375
6/10	1x35/16	7,8	20,5	23,0	900	525
6/10	1x50/16	9,4	22,0	24,5	1070	750
6/10	1x70/16	11,2	23,8	26,3	1300	1050
6/10	1x95/16	12,7	26,4	28,9	1590	1425
6/10	1x120/16	14,4	28,2	30,9	1880	1800
6/10	1x150/25	16,3	30,6	33,3	2320	2250
6/10	1x185/25	17,6	32,5	35,2	2670	2775
6/10	1x240/25	20,6	35,6	38,3	3310	3600
8,7/15	1x25/16	6,8	21,2	23,1	820	375
8,7/15	1x35/16	7,8	22,1	24,0	930	525
8,7/15	1x50/16	9,4	23,6	25,5	1110	750
8,7/15	1x70/16	11,2	26,0	27,9	1370	1050
8,7/15	1x95/16	12,7	27,6	29,5	1620	1425
8,7/15	1x120/16	14,4	29,4	31,4	1910	1800
8,7/15	1x150/25	16,3	32,8	34,8	2430	2250
8,7/15	1x185/25	17,6	33,8	35,8	2720	2775
8,7/15	1x240/25	20,6	37,8	39,8	3450	3600

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
12/20	1x25/16	6,8	22,4	24,3	870	375
12/20	1x35/16	7,8	23,1	25,0	970	525
12/20	1x50/16	9,4	25,4	27,3	1200	750
12/20	1x70/16	11,2	27,2	29,1	1440	1050
12/20	1x95/16	12,7	28,8	30,8	1690	1425
12/20	1x120/16	14,4	31,6	33,6	2060	1800
12/20	1x150/25	16,3	34,0	36,0	2510	2250
12/20	1x185/25	17,6	35,0	37,0	2810	2775
12/20	1x240/25	20,6	39,0	41,0	3540	3600
14/25	1x25/16	6,8	24,6	26,5	980	375
14/25	1x35/16	7,8	26,1	28,0	1130	525
14/25	1x50/16	9,4	27,6	29,5	1320	750
14/25	1x70/16	11,2	29,4	31,4	1570	1050
14/25	1x95/16	12,7	32,0	34,0	1900	1425
14/25	1x120/16	14,4	33,8	35,8	2210	1800
14/25	1x150/25	16,3	36,3	38,3	2680	2250
14/25	1x185/25	17,6	38,2	40,2	3060	2775
14/25	1x240/25	20,6	41,1	44,0	3730	3600
18/30	1x25/16	6,8	27,2	29,1	1120	375
18/30	1x35/16	7,8	28,1	30,0	1240	525
18/30	1x50/16	9,4	29,6	31,6	1440	750
18/30	1x70/16	11,2	32,4	34,4	1770	1050
18/30	1x95/16	12,7	34,1	36,1	2040	1425
18/30	1x120/16	14,4	35,9	37,9	2360	1800
18/30	1x150/25	16,3	39,3	41,3	2920	2250
18/30	1x185/25	17,6	40,1	43,0	3230	2775
18/30	1x240/25	20,6	43,1	46,0	3910	3600

URSUS® MT PLUS 3,6/6 ÷ 12/20 kV

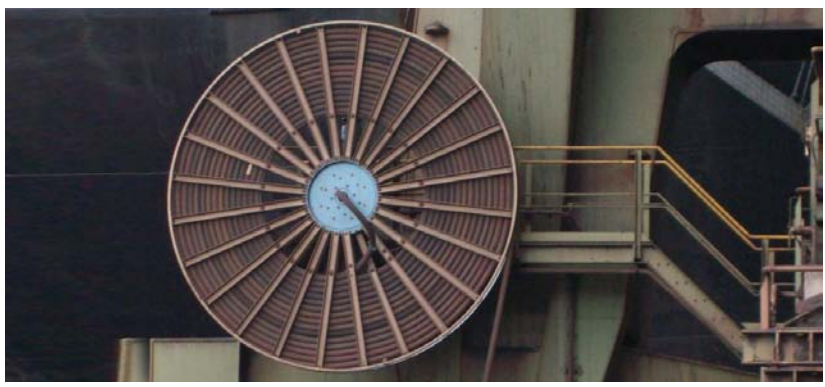
Based on DIN VDE 0250 Part 813



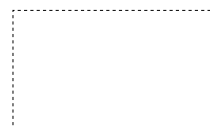
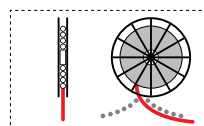
Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Earth Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Covering material	Semiconductive layer
Central Filler	Material	Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores with earth conductor split into 3 parts
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Gm1b/5GM5 quality rubber compound, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
④ Antitwisting element	Material	Polyester braid between inner and outer sheath
⑤ Outer Sheath	Material	5GM5 quality rubber compound, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)

* Special construction for higher flexibility



Main applications



Applications Flexible reeling cable with reduced weight and dimensions for high and extreme mechanical stresses, e.g. torsional stress, deflection into different planes and high reeling speed.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum torsional stress	°/m	± 25
Maximum tensile load*	N/mm ²	20
Max working speed	m/min	120
Special test	Reeling test	

* Referred to the total phase conductors cross section

Upon request it's available the KN version with improved mechanical characteristics designed for ASC's and ARMG's

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Weather resistance	For indoor and outdoor application

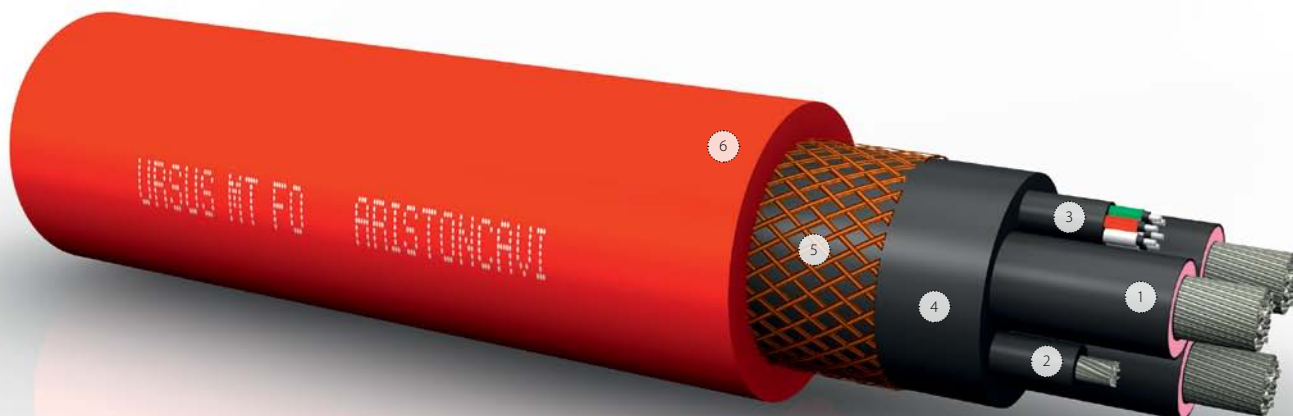
URSUS® MT PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3	6,8	39,9	41,6	2390	1500
3,6/6	3x35 + 3x25/3	7,8	42,9	44,6	2970	2100
3,6/6	3x50 + 3x25/3	9,4	46,0	47,7	3600	3000
3,6/6	3x70 + 3x35/3	11,2	49,8	51,6	4600	4200
3,6/6	3x95 + 3x50/3	12,7	55,8	57,6	5800	5700
3,6/6	3x120 + 3x70/3	14,4	59,6	61,4	7070	7200
3,6/6	3x150 + 3x70/3	16,3	66,0	68,3	8870	9000
3,6/6	3x185 + 3x95/3	17,6	67,9	70,2	9980	11100
6/10	3x25 + 3x25/3	6,8	39,9	41,6	2390	1500
6/10	3x35 + 3x25/3	7,8	42,9	44,6	2970	2100
6/10	3x50 + 3x25/3	9,4	46,0	47,7	3600	3000
6/10	3x70 + 3x35/3	11,2	49,8	51,6	4600	4200
6/10	3x95 + 3x50/3	12,7	55,8	57,6	5860	5700
6/10	3x120 + 3x70/3	14,4	59,6	61,4	7120	7200
6/10	3x150 + 3x70/3	16,3	66,0	68,3	8930	9000
6/10	3x185 + 3x95/3	17,6	67,9	70,2	10080	11100

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3	6,8	44,7	46,4	2800	1500
8,7/15	3x35 + 3x25/3	7,8	46,2	47,9	3160	2100
8,7/15	3x50 + 3x25/3	9,4	49,4	51,2	3960	3000
8,7/15	3x70 + 3x35/3	11,2	55,0	56,8	5020	4200
8,7/15	3x95 + 3x50/3	12,7	58,4	60,2	5840	5700
8,7/15	3x120 + 3x70/3	14,4	63,9	66,2	7420	7200
8,7/15	3x150+3x70/3	16,3	68,5	70,9	8620	9000
12/20	3x25 + 3x25/3	6,8	47,3	49,0	3340	1500
12/20	3x35 + 3x25/3	7,8	48,8	50,6	3690	2100
12/20	3x50 + 3x25/3	9,4	53,7	55,5	4640	3000
12/20	3x70 + 3x35/3	11,2	57,5	59,3	5720	4200
12/20	3x95 + 3x50/3	12,7	60,8	63,1	6660	5700
12/20	3x120 + 3x70/3	14,4	66,4	68,7	8200	7200

URSUS® MT FO 3,6/6 ÷ 12/20 kV

DIN VDE 0250 Part 813 approved



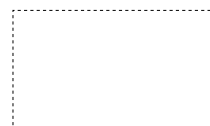
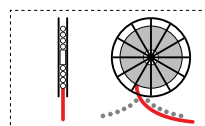
Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Insulation thickness	According to VDE 0250 Part 813 (table 1)
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Earth Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Covering material	Semiconductive layer
③ Fibre optics	Fibre	Transmission data kind 50/125 multimode, 62.5/125 multimode, 9/125 singlemode
	Nominal num. aperture	250 µm
	Number of fibres	6 - 8 - 12 - 24 multimode optical fibre, 4 - 6 - 8 - 12 - 24 singlemode optical fibre
	Fibres arrangement covering	Special rubber compound over the twisted cores
Central Filler	Material	Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores with earth conductor split into 2 parts + FO
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
④ Inner Sheath	Material	5GM3 quality rubber compound, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
⑤ Antitwisting element	Material	Polyester braid between inner and outer sheath
⑥ Outer Sheath	Material	5GM5 quality rubber compound, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)

* Special construction for higher flexibility



Main applications



Applications Flexible reeling cable with integrated fibre optics wires for high and extreme mechanical stresses, e.g. torsional stress, deflection into different planes and high reeling speed.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation				
Current rating	A	According to VDE 0298 Part 4			

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum torsional stress	°/m	± 25
Maximum tensile load*	N/mm ²	20
Max working speed	m/min	120
Special test	Reeling test	

* Referred to the total phase conductors cross section

Upon request it's available the KN version with improved mechanical characteristics designed for ASC's and ARMG's

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Weather resistance	For indoor and outdoor application

Optical working data

Graded index multimode fibre						Step index singlemode fibre			
Fibre	Attenuation at 850 nm (dB/km)	Attenuation at 1300 nm (dB/km)	Bandwidth at 850 nm (MHz*km)	Bandwidth at 1300 nm (MHz*km)	Numerical aperture	Attenuation at 1310 nm (dB/km)	Attenuation at 1550 nm (dB/km)	Chromatic disp. at 1285 - 1300 nm (ps/nm km)	Chromatic dispersion at 1550 nm (ps/nm km)
50/125	≤ 2,5	≤ 0,7	≥ 200	≥ 500	0,200 ± 0,015				
62,5/125	≤ 3,0	≤ 0,7	≥ 200	≥ 500	0,275 ± 0,015				
9/125						≤ 0,35	≤ 0,24	≤ 3	≤ 18

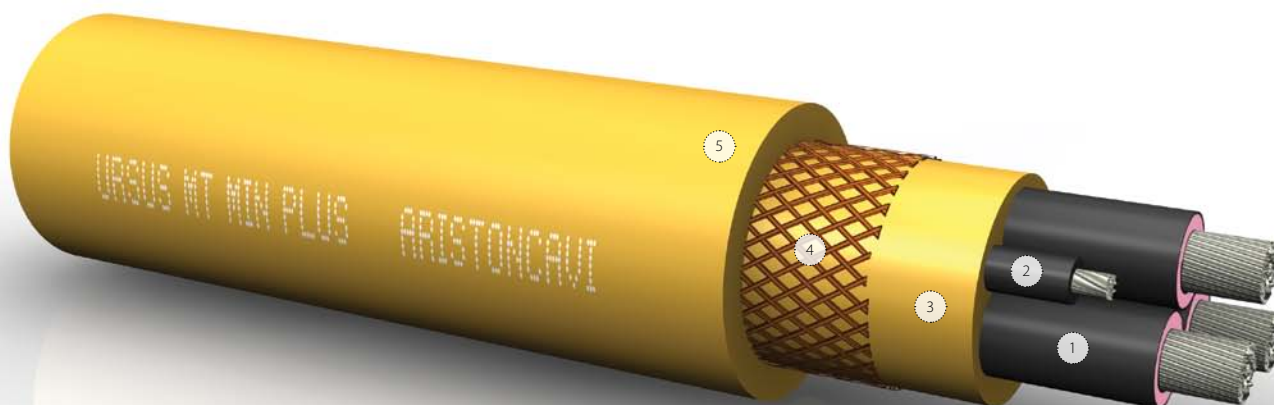
URSUS® MT FO 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 2x25/2 + FO	6,8	44,7	47,6	2820	1500
3,6/6	3x35 + 2x25/2 + FO	7,8	46,6	49,5	3190	2100
3,6/6	3x50 + 2x25/2 + FO	9,4	49,9	52,9	3990	3000
3,6/6	3x70 + 2x35/2 + FO	11,2	55,5	58,5	5070	4200
3,6/6	3x95 + 2x50/2 + FO	12,7	58,9	61,9	5900	5700
3,6/6	3x120 + 2x70/2 + FO	14,4	64,4	68,3	7490	7200
3,6/6	3x150 + 2x70/2 + FO	16,3	68,5	72,5	8710	9000
6/10	3x25 + 2x25/2 + FO	6,8	47,3	50,3	3370	1500
6/10	3x35 + 2x25/2 + FO	7,8	48,8	51,8	3730	2100
6/10	3x50 + 2x25/2 + FO	9,4	53,7	56,7	4680	3000
6/10	3x70 + 2x35/2 + FO	11,2	57,5	60,5	5770	4200
6/10	3x95 + 2x50/2 + FO	12,7	60,8	64,7	6720	5700
6/10	3x120 + 2x70/2 + FO	14,4	66,4	70,4	8280	7200

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 2x25/2 + FO	6,8	52,0	55,0	3680	1500
8,7/15	3x35 + 2x25/2 + FO	7,8	55,2	58,2	4310	2100
8,7/15	3x50 + 2x25/2 + FO	9,4	58,4	61,4	5020	3000
8,7/15	3x70 + 2x35/2 + FO	11,2	62,1	66,0	6170	4200
8,7/15	3x95 + 2x50/2 + FO	12,7	67,2	71,2	7380	5700
12/20	3x25 + 2x25/2 + FO	6,8	58,0	61,0	4490	1500
12/20	3x35 + 2x25/2 + FO	7,8	59,4	62,4	4830	2100
12/20	3x50 + 2x25/2 + FO	9,4	64,3	68,2	5840	3000
12/20	3x70 + 2x35/2 + FO	11,2	68,1	72,1	7030	4200

URSUS® MT MIN PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813



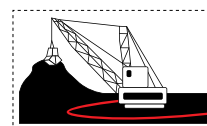
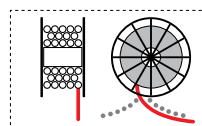
Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Insulation material	3G13 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Earth Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Covering material	Semiconductive layer
Central Filler	Material	Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores with earth conductor split into 3 parts
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Gm1b/5GM5 quality rubber compound, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
④ Antitwisting element	Material	Polyester braid between inner and outer sheath
⑤ Outer Sheath	Material	Special abrasion resistant rubber compound 5GM5 quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Yellow

* Special construction for higher flexibility



Main applications



Applications Flexible cable for energy supply of heavy mobile equipment such as drag lines, shovels, dredges, drills, under extreme mechanical stresses and abrasion during trailing operation in opencast mine.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum torsional stress	°/m	± 25
Maximum tensile load*	N/mm ²	20
Special test	Reeling test	

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2	
Resistance to oil	According to IEC 60811-2-1	
Ozone resistance	According to IEC 60811-2-1	
Weather resistance	For indoor and outdoor application	

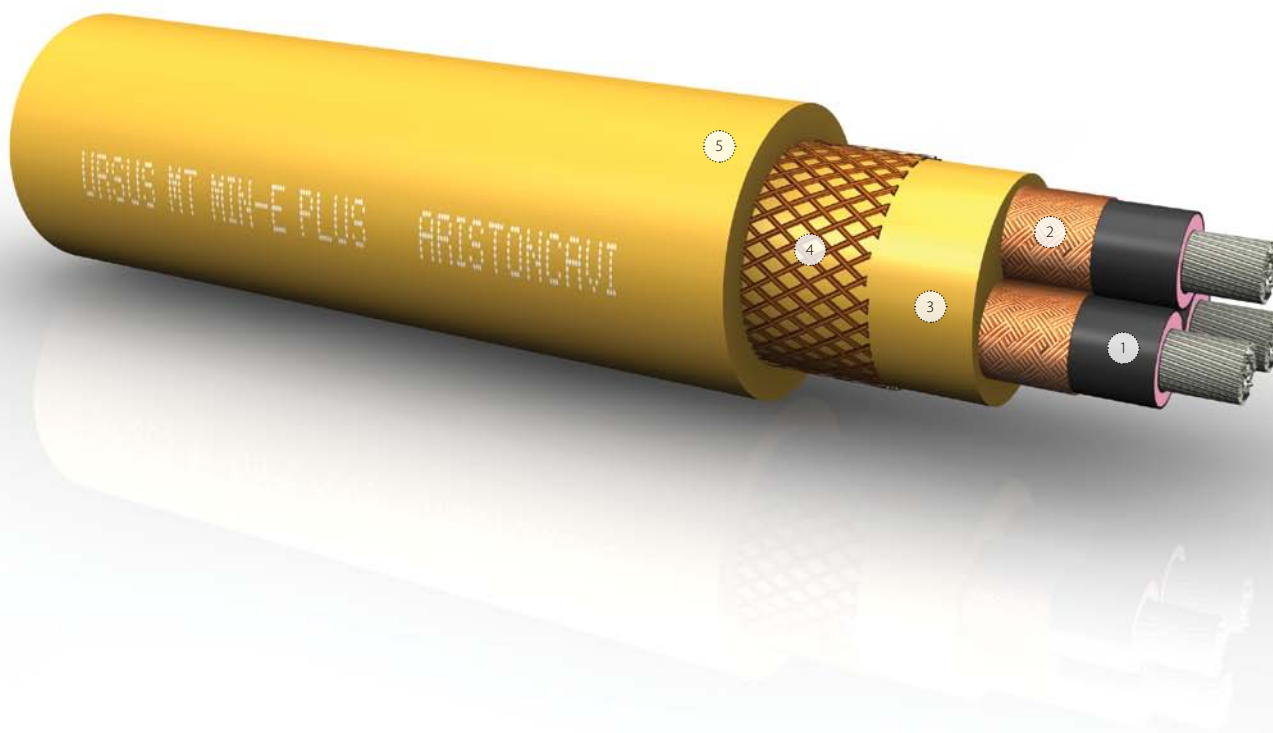
URSUS® MT MIN PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3	6,8	39,9	41,6	2390	1500
3,6/6	3x35 + 3x25/3	7,8	42,9	44,6	2970	2100
3,6/6	3x50 + 3x25/3	9,4	46,0	47,7	3600	3000
3,6/6	3x70 + 3x35/3	11,2	49,8	51,6	4600	4200
3,6/6	3x95 + 3x50/3	12,7	55,8	57,6	5800	5700
3,6/6	3x120 + 3x70/3	14,4	59,6	61,4	7070	7200
3,6/6	3x150 + 3x70/3	16,3	66,0	68,3	8870	9000
3,6/6	3x185 + 3x95/3	17,6	67,9	70,2	9980	11100
6/10	3x25 + 3x25/3	6,8	39,9	42,2	2430	1500
6/10	3x35 + 3x25/3	7,8	42,9	45,2	3010	2100
6/10	3x50 + 3x25/3	9,4	46,0	48,3	3640	3000
6/10	3x70 + 3x35/3	11,2	49,8	52,2	4640	4200
6/10	3x95 + 3x50/3	12,7	55,8	58,2	5900	5700
6/10	3x120 + 3x70/3	14,4	59,6	62,1	7160	7200
6/10	3x150 + 3x70/3	16,3	66,0	69,0	8970	9000
6/10	3x185 + 3x95/3	17,6	67,9	70,9	10120	11100

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3	6,8	44,7	46,4	2800	1500
8,7/15	3x35 + 3x25/3	7,8	46,2	47,9	3160	2100
8,7/15	3x50 + 3x25/3	9,4	49,4	51,2	3960	3000
8,7/15	3x70 + 3x35/3	11,2	55,0	56,8	5020	4200
8,7/15	3x95 + 3x50/3	12,7	58,4	60,2	5840	5700
8,7/15	3x120 + 3x70/3	14,4	63,9	66,2	7420	7200
8,7/15	3x150+3x70/3	16,3	68,5	70,9	8620	9000
12/20	3x25 + 3x25/3	6,8	47,3	49,0	3340	1500
12/20	3x35 + 3x25/3	7,8	48,8	50,6	3690	2100
12/20	3x50 + 3x25/3	9,4	53,7	55,5	4640	3000
12/20	3x70 + 3x35/3	11,2	57,5	59,3	5720	4200
12/20	3x95 + 3x50/3	12,7	60,8	63,1	6660	5700
12/20	3x120 + 3x70/3	14,4	66,4	68,7	8200	7200

URSUS® MT MIN-E PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813



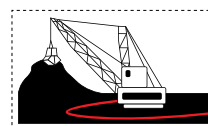
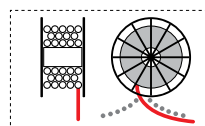
Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Conductor construction	Individual copper braid
Central Filler	Material	Rubber compound on textile polyester support
Cores Assembly	Assembly	Twisted cores
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Special abrasion resistant rubber compound 5GM5 quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
④ Antitwisting element	Material	Polyester braid between inner and outer sheath
⑤ Outer Sheath	Material	Special abrasion resistant rubber compound 5GM5 quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Yellow

* Special construction for higher flexibility



Main applications



Applications Flexible cable for energy supply of heavy mobile equipment such as drag lines, shovels, dredges, drills, under extreme mechanical stresses and abrasion during trailing operation in opencast mine.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2	
Resistance to oil	According to IEC 60811-2-1	
Ozone resistance	According to IEC 60811-2-1	
Weather resistance	For indoor and outdoor application	

URSUS® MT MIN-E PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3E	6,8	43,4	45,1	2850	1125
3,6/6	3x35 + 3x25/3E	7,8	45,0	46,7	3200	1575
3,6/6	3x50 + 3x25/3E	9,4	48,1	49,8	3850	2250
3,6/6	3x70 + 3x35/3E	11,2	53,7	55,5	4980	3150
3,6/6	3x95 + 3x50/3E	12,7	58,4	60,2	6200	4275
3,6/6	3x120 + 3x70/3E	14,4	62,9	65,2	7580	5400
3,6/6	3x150 + 3x70/3E	16,3	69,3	71,7	9090	6750
6/10	3x25 + 3x25/3E	6,8	43,4	45,7	2890	1125
6/10	3x35 + 3x25/3E	7,8	45,0	47,3	3240	1575
6/10	3x50 + 3x25/3E	9,4	48,1	50,4	3890	2250
6/10	3x70 + 3x35/3E	11,2	53,7	56,1	5020	3150
6/10	3x95 + 3x50/3E	12,7	58,4	60,8	6240	4275
6/10	3x120 + 3x70/3E	14,4	62,9	65,9	7620	5400
6/10	3x150 + 3x70/3E	16,3	69,3	72,4	9130	6750

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3E	6,8	46,9	48,6	3180	1125
8,7/15	3x35 + 3x25/3E	7,8	48,3	50,0	3570	1575
8,7/15	3x50 + 3x25/3E	9,4	53,3	55,1	4420	2250
8,7/15	3x70 + 3x35/3E	11,2	57,1	58,9	5410	3150
8,7/15	3x95 + 3x50/3E	12,7	60,8	63,1	6500	4275
8,7/15	3x120 + 3x70/3E	14,4	67,2	69,5	8150	5400
12/20	3x25 + 3x25/3E	6,8	49,4	51,2	3450	1125
12/20	3x35 + 3x25/3E	7,8	50,9	52,7	3820	1575
12/20	3x50 + 3x25/3E	9,4	55,8	57,6	4720	2250
12/20	3x70 + 3x35/3E	11,2	59,6	61,4	5690	3150
12/20	3x95 + 3x50/3E	12,7	63,3	65,6	6860	4275

URSUS® MT MIN PUR HF PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813



Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Earth Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Covering material	Semiconductive layer
Central Filler	Material	Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores with earth conductor split into 3 parts
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Halogen free polyurethane
④ Antitwisting element	Material	Polyester braid between inner and outer sheath
⑤ Outer Sheath	Material	Halogen free polyurethane
	Colour	Yellow

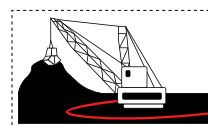
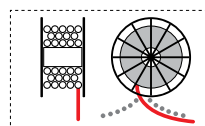
* Special construction for higher flexibility

Upon request:

URSUS® MT MIN PUR HF RFB special version with reflecting tape and transparent outer sheath, without textile braid.



Main applications



Applications Flexible cable for energy supply of heavy mobile equipment such as drag lines, shovels, dredges, drills, under extreme mechanical stresses and abrasion during trailing operation in opencast mine. Halogen free polyurethane sheathed version.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 50 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum torsional stress	°/m	± 25
Maximum tensile load*	N/mm ²	20
Special test	Reeling test	

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2 Halogen free according to IEC 60754-1 and IEC 60754-2	
Resistance to oil	According to IEC 60811-2-1	
Ozone resistance	According to IEC 60811-2-1	
Weather resistance	For indoor and outdoor application	

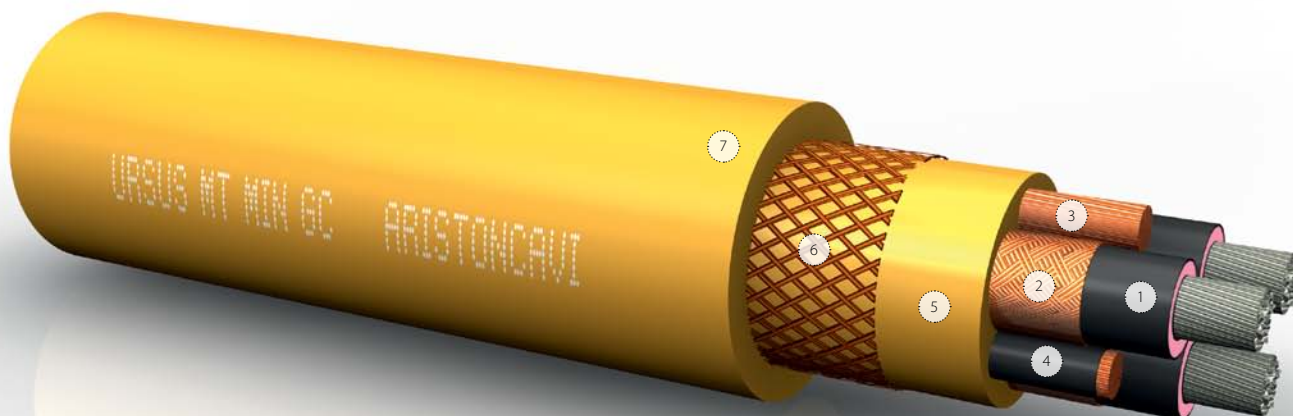
URSUS® MT MIN PUR HF PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3	6,8	37,4	38,6	2280	1500
3,6/6	3x35 + 3x25/3	7,8	39,0	40,2	2630	2100
3,6/6	3x50 + 3x25/3	9,4	42,0	43,7	3230	3000
3,6/6	3x70 + 3x35/3	11,2	45,8	47,5	4160	4200
3,6/6	3x95 + 3x50/3	12,7	50,0	51,8	5080	5700
3,6/6	3x120 + 3x70/3	14,4	53,8	55,6	6280	7200
3,6/6	3x150 + 3x70/3	16,3	59,3	61,1	7570	9000
3,6/6	3x185 + 3x95/3	17,6	61,1	63,4	8740	11100
6/10	3x25 + 3x25/3	6,8	37,4	39,2	2320	1500
6/10	3x35 + 3x25/3	7,8	39,0	40,8	2670	2100
6/10	3x50 + 3x25/3	9,4	42,0	44,3	3270	3000
6/10	3x70 + 3x35/3	11,2	45,8	48,1	4200	4200
6/10	3x95 + 3x50/3	12,7	50,0	52,4	5120	5700
6/10	3x120 + 3x70/3	14,4	53,8	56,3	6320	7200
6/10	3x150 + 3x70/3	16,3	59,3	61,8	7610	9000
6/10	3x185 + 3x95/3	17,6	61,1	64,1	8780	11100

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3	6,8	40,7	42,4	2580	1500
8,7/15	3x35 + 3x25/3	7,8	42,2	43,9	2930	2100
8,7/15	3x50 + 3x25/3	9,4	45,4	47,1	3560	3000
8,7/15	3x70 + 3x35/3	11,2	49,2	51,0	4510	4200
8,7/15	3x95 + 3x50/3	12,7	52,6	54,4	5360	5700
8,7/15	3x120 + 3x70/3	14,4	57,2	59,0	6690	7200
8,7/15	3x150 + 3x70/3	16,3	61,7	64,0	7910	9000
8,7/15	3x185 + 3x95/3	17,6	63,8	66,1	9110	11100
12/20	3x25 + 3x25/3	6,8	43,3	45,0	2810	1500
12/20	3x35 + 3x25/3	7,8	44,8	46,5	3160	2100
12/20	3x50 + 3x25/3	9,4	47,9	49,6	3810	3000
12/20	3x70 + 3x35/3	11,2	51,7	53,5	4780	4200
12/20	3x95 + 3x50/3	12,7	55,1	56,9	5660	5700
12/20	3x120 + 3x70/3	14,4	59,6	61,9	7020	7200
12/20	3x150 + 3x70/3	16,3	64,2	66,5	8250	9000
12/20	3x185 + 3x95/3	17,6	66,3	68,6	9460	11100

URSUS® MT MIN GC 1,8/3 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813



Cable construction

①	Phase Conductors	Conductor material	Tinned copper
		Conductor construction	Class 5 VDE 0295 (IEC 60228)*
		Insulation material	3G13 quality rubber compound, according to VDE 0207 Part 20
		Insulation thickness	According to VDE 0250 Part 813 (table 1)
		Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation, from 3,6/6 kV
② ③ ④	Earth Conductors	Material	Bare copper
		Construction	Individual copper braid +2 earth conductors + 1 checking earth wiring conductor
	Central Filler	Material	Rubber compound on textile polyester support
	Cores Assembly	Assembly	Twisted cores with earth conductor split into 3 parts
		Separator on the twisted assembly	1,8/3 kV cables: TNT tape wound on the twisted cores From 3,6/6 kV: semiconductive tape wound on the twisted cores
⑤	Inner Sheath	Material	Special abrasion resistant rubber compound 5GM5 quality, according to VDE 0207 Part 21
		Thickness	According to VDE 0250 Part 813 (table 2)
⑥	Antitwisting element	Material	Polyester braid between inner and outer sheath
⑦	Outer Sheath	Material	Special abrasion resistant rubber compound 5GM5 quality, according to VDE 0207 Part 21
		Thickness	According to VDE 0250 Part 813 (table 2)
		Colour	Yellow

* Special construction for higher flexibility

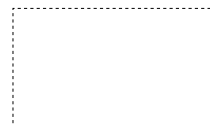
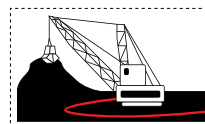
Upon request:

URSUS® MIN GC PUR HF: special version with halogen free polyurethane outer sheath

URSUS® MIN GC PUR HF RFB: special version with reflecting tape and halogen free transparent polyurethane outer sheath, without textile braid



Main applications



Applications Flexible cable for energy supply of heavy mobile equipment such as drag lines, shovels, dredges, drills, under extreme mechanical stresses and abrasion during trailing operation in opencast mine. Special construction with additional ground check conductor.

Electrical working data

Nominal rated voltage U_0 / U	kV	1,8/3	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	6	11	17	24	29
Max AC voltage	kV	2,1/3,6	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation					
Current rating	A According to VDE 0298 Part 4					

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Weather resistance	For indoor and outdoor application

URSUS® MT MIN GC 1,8/3 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
1,8/3	3x25 + 2x25/2 + 10	6,8	38,2	42,3	2530	1125
1,8/3	3x35 + 2x25/2 + 10	7,8	39,7	44,0	2930	1575
1,8/3	3x50 + 2x25/2 + 10	9,4	42,7	47,2	3540	2250
1,8/3	3x70 + 2x35/2 + 10	11,2	48,1	53,0	4730	3150
1,8/3	3x95 + 2x50/2 + 10	12,7	53,0	58,3	5930	4275
1,8/3	3x120 + 2x70/2 + 10	14,4	57,4	63,1	7270	5400
1,8/3	3x150 + 2x70/2 + 10	16,3	63,8	70,0	8920	6750
1,8/3	3x185 + 2x95/2 + 10	17,6	65,6	71,9	10220	8325
3,6/6	3x25 + 2x25/2 + 10	6,8	45,4	50,1	3300	1125
3,6/6	3x35 + 2x25/2 + 10	7,8	46,7	51,5	3710	1575
3,6/6	3x50 + 2x25/2 + 10	9,4	51,5	56,7	4600	2250
3,6/6	3x70 + 2x35/2 + 10	11,2	55,2	60,7	5710	3150
3,6/6	3x95 + 2x50/2 + 10	12,7	58,9	64,8	6820	4275
3,6/6	3x120 + 2x70/2 + 10	14,4	65,1	71,4	8540	5400
3,6/6	3x150 + 2x70/2 + 10	16,3	69,6	76,3	9890	6750

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
6/10	3x25 + 2x25/2 + 10	6,8	48,1	53,0	3640	1125
6/10	3x35 + 2x25/2 + 10	7,8	49,5	54,6	4070	1575
6/10	3x50 + 2x25/2 + 10	9,4	54,2	59,7	4980	2250
6/10	3x70 + 2x35/2 + 10	11,2	57,9	63,6	6070	3150
6/10	3x95 + 2x50/2 + 10	12,7	61,6	67,7	7280	4275
6/10	3x120 + 2x70/2 + 10	14,4	67,9	74,4	9070	5400
8,7/15	3x25 + 2x25/2 + 10	6,8	53,9	59,3	4490	1125
8,7/15	3x35 + 2x25/2 + 10	7,8	55,3	60,8	4920	1575
8,7/15	3x50 + 2x25/2 + 10	9,4	58,5	64,2	5700	2250
8,7/15	3x70 + 2x35/2 + 10	11,2	64,2	70,5	7200	3150
8,7/15	3x95 + 2x50/2 + 10	12,7	67,9	74,4	8480	4275
12/20	3x25 + 2x25/2 + 10	6,8	58,2	63,9	5110	1125
12/20	3x35 + 2x25/2 + 10	7,8	59,8	65,7	5580	1575
12/20	3x50 + 2x25/2 + 10	9,4	64,6	70,9	6550	2250
12/20	3x70 + 2x35/2 + 10	11,2	68,3	74,8	7800	3150

URSUS® MT MIN F PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813

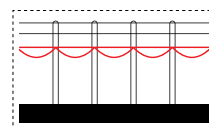
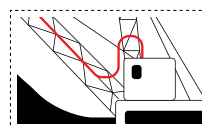


Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Earth Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Covering material	Semiconductive layer
	Central Filler	Material Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores with earth conductor split into 3 parts
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Rubber compound GM1b quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
④ Outer Sheath	Material	Rubber compound 5GM3 quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Red



Main applications



Applications Flexible cable for fixed energy distribution lines in mines and alongside material handling equipment.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	20

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Behaviour in water	According to HD22.16
Weather resistance	For indoor and outdoor application

URSUS® MT MIN F PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3	6,8	39,9	41,6	2580	1500
3,6/6	3x35 + 3x25/3	7,8	42,9	44,6	3080	2100
3,6/6	3x50 + 3x25/3	9,4	46,0	47,7	3710	3000
3,6/6	3x70 + 3x35/3	11,2	49,8	51,6	4670	4200
3,6/6	3x95 + 3x50/3	12,7	55,8	57,6	5880	5700
3,6/6	3x120 + 3x70/3	14,4	59,6	61,4	7140	7200
3,6/6	3x150 + 3x70/3	16,3	66,0	68,3	8690	9000
3,6/6	3x185 + 3x95/3	17,6	67,9	70,2	9890	11100
6/10	3x25 + 3x25/3	6,8	39,9	42,2	2620	1500
6/10	3x35 + 3x25/3	7,8	42,9	45,2	3120	2100
6/10	3x50 + 3x25/3	9,4	46,0	48,3	3750	3000
6/10	3x70 + 3x35/3	11,2	49,8	52,2	4710	4200
6/10	3x95 + 3x50/3	12,7	55,8	58,2	5920	5700
6/10	3x120 + 3x70/3	14,4	59,6	62,1	7180	7200
6/10	3x150 + 3x70/3	16,3	66,0	69,0	8730	9000
6/10	3x185 + 3x95/3	17,6	67,9	70,9	9930	11100

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3	6,8	44,7	46,4	3040	1500
8,7/15	3x35 + 3x25/3	7,8	46,2	47,9	3410	2100
8,7/15	3x50 + 3x25/3	9,4	49,4	51,2	4080	3000
8,7/15	3x70 + 3x35/3	11,2	55,0	56,8	5300	4200
8,7/15	3x95 + 3x50/3	12,7	58,4	60,2	6210	5700
8,7/15	3x120 + 3x70/3	14,4	63,9	66,2	7770	7200
8,7/15	3x150+3x70/3	16,3	68,5	70,9	9070	9000
8,7/15	3x185 + 3x95/3	17,6	70,6	73,0	10300	11100
12/20	3x25 + 3x25/3	6,8	47,3	49,0	3310	1500
12/20	3x35 + 3x25/3	7,8	48,8	50,6	3680	2100
12/20	3x50 + 3x25/3	9,4	53,7	55,5	4580	3000
12/20	3x70 + 3x35/3	11,2	57,5	59,3	5600	4200
12/20	3x95 + 3x50/3	12,7	60,8	63,1	6550	5700
12/20	3x120 + 3x70/3	14,4	66,4	68,7	8130	7200
12/20	3x150 + 3x70/3	16,3	71,0	73,4	9460	9000

URSUS® MT MIN F-E PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813

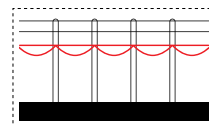
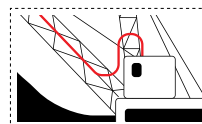


Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Construction	Individual copper wire screen
Central Filler Cores Assembly	Material	Rubber compound on textile polyester support
	Assembly	Twisted cores
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Rubber compound GM1b quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
④ Outer Sheath	Material	Rubber compound 5GM3 quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Red



Main applications



Applications Flexible cable for fixed energy distribution lines in mines and alongside material handling equipment.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation and the screen over every conductor				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Behaviour in water	According to HD22.16
Weather resistance	For indoor and outdoor application

URSUS® MT MIN F-E PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3E	6,8	43,9	45,6	2870	1125
3,6/6	3x35 + 3x25/3E	7,8	45,4	47,1	3230	1575
3,6/6	3x50 + 3x25/3E	9,4	48,5	50,3	3860	2250
3,6/6	3x70 + 3x35/3E	11,2	54,1	55,9	5010	3150
3,6/6	3x95 + 3x50/3E	12,7	58,4	60,2	6150	4275
3,6/6	3x120 + 3x70/3E	14,4	62,5	64,8	7450	5400
3,6/6	3x150 + 3x70/3E	16,3	68,9	71,3	8980	6750
3,6/6	3x185 + 3x95/3E	17,6	71,9	74,3	10290	8325
6/10	3x25 + 3x25/3E	6,8	43,9	46,2	2910	1125
6/10	3x35 + 3x25/3E	7,8	45,4	47,7	3270	1575
6/10	3x50 + 3x25/3E	9,4	48,5	50,9	3900	2250
6/10	3x70 + 3x35/3E	11,2	54,1	56,5	5050	3150
6/10	3x95 + 3x50/3E	12,7	58,4	60,8	6190	4275
6/10	3x120 + 3x70/3E	14,4	62,5	65,5	7490	5400
6/10	3x150 + 3x70/3E	16,3	68,9	72,0	9020	6750
6/10	3x185 + 3x95/3E	17,6	71,9	75,0	10330	8325

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3E	6,8	47,3	49,0	3200	1125
8,7/15	3x35 + 3x25/3E	7,8	48,8	50,6	3570	1575
8,7/15	3x50 + 3x25/3E	9,4	53,7	55,5	4440	2250
8,7/15	3x70 + 3x35/3E	11,2	57,5	59,3	5410	3150
8,7/15	3x95 + 3x50/3E	12,7	60,8	63,1	6480	4275
8,7/15	3x120 + 3x70/3E	14,4	66,8	69,1	8060	5400
8,7/15	3x150+3x70/3E	16,3	71,5	73,9	9370	6750
12/20	3x25 + 3x25/3E	6,8	49,8	51,6	3450	1125
12/20	3x35 + 3x25/3E	7,8	51,3	53,1	3810	1575
12/20	3x50 + 3x25/3E	9,4	56,3	58,1	4740	2250
12/20	3x70 + 3x35/3E	11,2	60,1	61,9	5730	3150
12/20	3x95 + 3x50/3E	12,7	63,3	65,6	6810	4275
12/20	3x120 + 3x70/3E	14,4	69,3	71,7	8420	5400

URSUS® MT SUB PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813



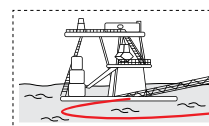
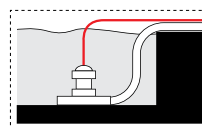
Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Earth Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Covering material	Semiconductive layer
Central Filler	Material	Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores with earth conductor split into 3 parts
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Special EPR rubber compound water proofing GM1b quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
④ Outer Sheath	Material	Special CM rubber compound water proofing 5GM3 quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Black

* Special construction for higher flexibility



Main applications



Applications Flexible energy supply cable for use in permanent immersion in water under high mechanical stresses: pumps, dredgers, floating docks, etc. It is suitable for immersion up to 300 m depth and for trailing operations of opencast mining equipment.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Maximum permissible water temperature	°C	40
Ambient temperature: mobile condition	°C	- 25 to + 60
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	20

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Behaviour in water	HD22.16 and AC internal test, suitable for immersion in salty and brackish water
Weather resistance	For indoor and outdoor application

URSUS® MT SUB PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3	6,8	39,9	41,6	2580	1500
3,6/6	3x35 + 3x25/3	7,8	42,9	44,6	3080	2100
3,6/6	3x50 + 3x25/3	9,4	46,0	47,7	3710	3000
3,6/6	3x70 + 3x35/3	11,2	49,8	51,6	4670	4200
3,6/6	3x95 + 3x50/3	12,7	55,8	57,6	5880	5700
3,6/6	3x120 + 3x70/3	14,4	59,6	61,4	7140	7200
3,6/6	3x150 + 3x70/3	16,3	66,0	68,3	8690	9000
3,6/6	3x185 + 3x95/3	17,6	67,9	70,2	9890	11100
6/10	3x25 + 3x25/3	6,8	39,9	42,2	2620	1500
6/10	3x35 + 3x25/3	7,8	42,9	45,2	3120	2100
6/10	3x50 + 3x25/3	9,4	46,0	48,3	3750	3000
6/10	3x70 + 3x35/3	11,2	49,8	52,2	4710	4200
6/10	3x95 + 3x50/3	12,7	55,8	58,2	5920	5700
6/10	3x120 + 3x70/3	14,4	59,6	62,1	7180	7200
6/10	3x150 + 3x70/3	16,3	66,0	69,0	8730	9000
6/10	3x185 + 3x95/3	17,6	67,9	70,9	9930	11100

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3	6,8	47,3	49,0	3310	1500
8,7/15	3x35 + 3x25/3	7,8	48,8	50,6	3680	2100
8,7/15	3x50 + 3x25/3	9,4	53,7	55,5	4580	3000
8,7/15	3x70 + 3x35/3	11,2	57,5	59,3	5600	4200
8,7/15	3x95 + 3x50/3	12,7	60,8	63,1	6550	5700
8,7/15	3x120 + 3x70/3	14,4	66,4	68,7	8130	7200
8,7/15	3x150+3x70/3	16,3	71,0	73,4	9460	9000
8,7/15	3x185+3x95/3	17,6	73,1	75,5	10700	11100
12/20	3x25 + 3x25/3	6,8	52,0	53,8	3830	1500
12/20	3x35 + 3x25/3	7,8	55,2	57,0	4440	2100
12/20	3x50 + 3x25/3	9,4	58,4	60,2	5170	3000
12/20	3x70 + 3x35/3	11,2	62,1	64,4	6250	4200
12/20	3x95 + 3x50/3	12,7	67,2	69,5	7480	5700
12/20	3x120 + 3x70/3	14,4	71,0	73,4	8840	7200

URSUS® MT SUB-E PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813



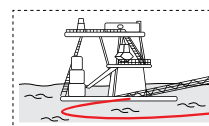
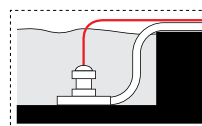
Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)*
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Construction	Individual copper braid
Central Filler	Material	Rubber compound on textile polyester support
Cores Assembly	Assembly	Twisted cores
	Separator on the twisted assembly	Semiconductive tape wound on the twisted cores
③ Inner Sheath	Material	Special EPR rubber compound water proofing GM1b quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
④ Outer Sheath	Material	Special CM rubber compound water proofing 5GM3 quality, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Black

* Special construction for higher flexibility



Main applications



Applications Flexible energy supply cable for use in permanent immersion in water under high mechanical stresses: pumps, dredgers, floating docks, etc. It is suitable for immersion up to 300 m depth and for trailing operations of opencast mining equipment.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation and the screen over every conductor				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Maximum permissible water temperature	°C	40
Ambient temperature: mobile condition	°C	- 25 to + 60
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Resistance to oil	According to IEC 60811-2-1
Ozone resistance	According to IEC 60811-2-1
Behaviour in water	HD22.16 and AC internal test, suitable for immersion in salty and brackish water
Weather resistance	For indoor and outdoor application

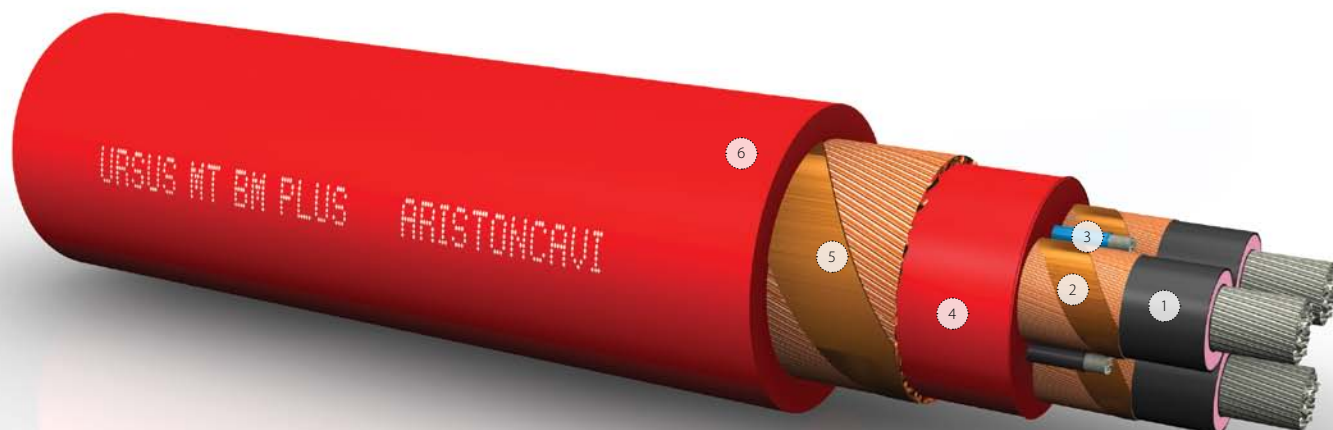
URSUS® MT SUB-E PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3E	6,8	43,4	45,1	2830	1125
3,6/6	3x35 + 3x25/3E	7,8	45,0	46,7	3180	1575
3,6/6	3x50 + 3x25/3E	9,4	48,1	49,8	3830	2250
3,6/6	3x70 + 3x35/3E	11,2	53,7	55,5	4960	3150
3,6/6	3x95 + 3x50/3E	12,7	58,4	60,2	6170	4275
3,6/6	3x120 + 3x70/3E	14,4	62,9	65,2	7540	5400
3,6/6	3x150 + 3x70/3E	16,3	69,3	71,7	9050	6750
3,6/6	3x185 + 3x95/3E	17,6	72,1	74,5	10350	8325
6/10	3x25 + 3x25/3E	6,8	43,4	45,7	2870	1125
6/10	3x35 + 3x25/3E	7,8	45,0	47,3	3220	1575
6/10	3x50 + 3x25/3E	9,4	48,1	50,4	3870	2250
6/10	3x70 + 3x35/3E	11,2	53,7	56,1	5000	3150
6/10	3x95 + 3x50/3E	12,7	58,4	60,8	6210	4275
6/10	3x120 + 3x70/3E	14,4	62,9	65,9	7580	5400
6/10	3x150 + 3x70/3E	16,3	69,3	72,4	9090	6750
6/10	3x185 + 3x95/3E	17,6	72,1	75,2	10390	8325

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3E	6,8	49,4	51,2	3430	1125
8,7/15	3x35 + 3x25/3E	7,8	50,9	52,7	3800	1575
8,7/15	3x50 + 3x25/3E	9,4	55,8	57,6	4700	2250
8,7/15	3x70 + 3x35/3E	11,2	59,6	61,4	5670	3150
8,7/15	3x95 + 3x50/3E	12,7	63,3	65,6	6830	4275
8,7/15	3x120 + 3x70/3E	14,4	69,8	72,2	8520	5400
12/20	3x25 + 3x25/3E	6,8	55,9	57,7	4160	1125
12/20	3x35 + 3x25/3E	7,8	57,3	59,1	4560	1575
12/20	3x50 + 3x25/3E	9,4	60,5	62,3	5300	2250
12/20	3x70 + 3x35/3E	11,2	66,1	67,9	6580	3150
12/20	3x95 + 3x50/3E	12,7	69,8	72,2	7740	4275

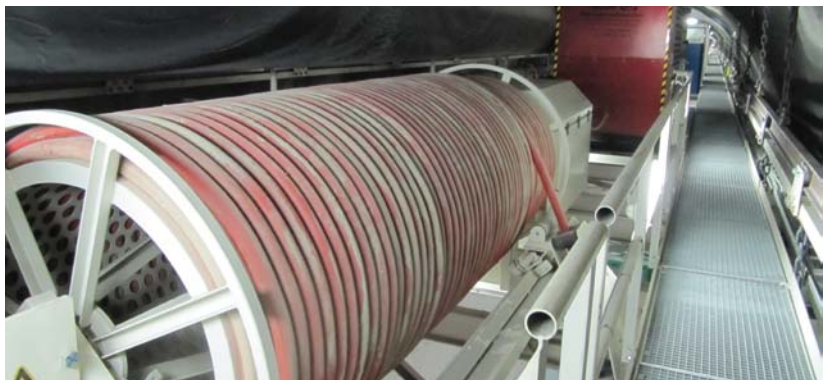
URSUS® MT BM PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813

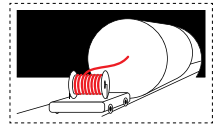
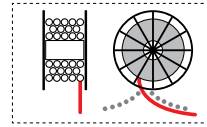


Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Construction	Individual copper wire screen
③ Control Conductors	Nominal cross section	2,5 mm ²
	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
Central Filler	Material	Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores
	Separator on the twisted assembly	TNT tape wound on the twisted cores
④ Inner Sheath	Material	5GM5 quality rubber compound, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
⑤ Monitoring Conductor	Material	Copper wire
	Assembly	Screen over the inner sheath
⑥ Outer Sheath	Material	5GM5 quality rubber compound, according to VDE 0207 Part 21
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Red



Main applications



Applications Flexible cable suitable for reeling drum of tunnel boring machines and generally for tunnel application.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation and the screen over every conductor				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum torsional stress	°/m	± 25
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2	
Resistance to oil	According to IEC 60811-2-1	
Ozone resistance	According to IEC 60811-2-1	
Weather resistance	For indoor and outdoor application	

URSUS® MT BM PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	45,4	48,8	3010	1125
3,6/6	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	46,9	50,4	3390	1575
3,6/6	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	50,0	53,6	4050	2250
3,6/6	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	55,6	59,4	5260	3150
3,6/6	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	59,9	63,9	6460	4275
3,6/6	3x120 + 3x70/3E + 3x2,5ST + ÜL	14,4	64,0	68,4	7820	5400
3,6/6	3x150 + 3x70/3E + 3x2,5ST + ÜL	16,3	70,4	75,0	9430	6750
6/10	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	45,4	49,4	3050	1125
6/10	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	46,9	51,0	3430	1575
6/10	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	50,0	54,2	4090	2250
6/10	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	55,6	60,0	5300	3150
6/10	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	59,9	64,5	6500	4275
6/10	3x120 + 3x70/3E + 3x2,5ST + ÜL	14,4	64,0	69,1	7860	5400
6/10	3x150 + 3x70/3E + 3x2,5ST + ÜL	16,3	70,4	75,7	9470	6750

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	48,0	51,5	3590	1125
8,7/15	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	49,5	53,1	3990	1575
8,7/15	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	54,4	58,2	4880	2250
8,7/15	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	58,2	62,2	5950	3150
8,7/15	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	61,4	65,7	7030	4275
8,7/15	3x120 + 3x70/3E + 3x2,5ST + ÜL	14,4	67,4	71,9	8690	5400
12/20	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	50,5	54,1	3860	1125
12/20	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	52,3	56,0	4260	1575
12/20	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	57,5	61,4	5190	2250
12/20	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	61,0	65,3	6280	3150
12/20	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	66,4	70,9	7640	4275
12/20	3x120 + 3x70/3E + 3x2,5ST + ÜL	14,4	70,5	75,2	9050	5400

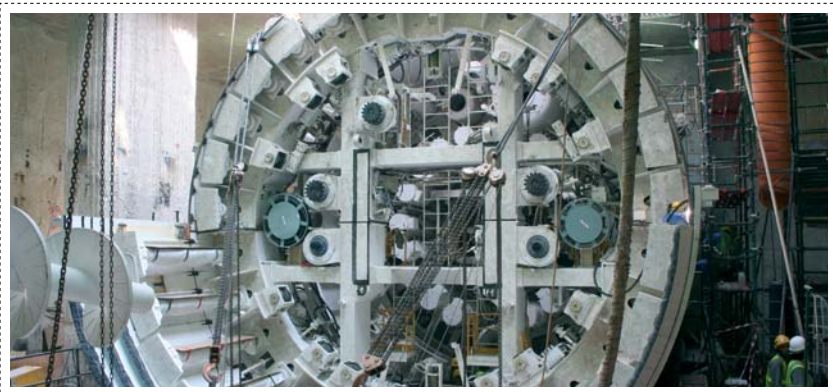
URSUS® MT BM PUR HF PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 813

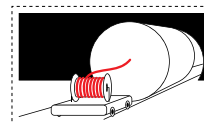
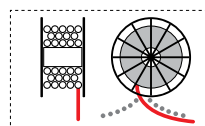


Cable construction

① Phase Conductors	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Construction	Individual copper wire screen
③ Control Conductors	Nominal cross section	2,5 mm ²
	Conductor material	Tinned copper
	Conductor construction	Class 5 VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
Central Filler	Material	Semiconductive compound on textile polyester support
Cores Assembly	Assembly	Twisted cores
	Separator on the twisted assembly	TNT tape wound on the twisted cores
④ Inner Sheath	Material	Halogen free compound
	Thickness	According to VDE 0250 Part 813 (table 2)
⑤ Monitoring Conductor	Material	Copper wire
	Assembly	Screen over the inner sheath
⑥ Outer Sheath	Material	Halogen free polyurethane
	Thickness	According to VDE 0250 Part 813 (table 2)
	Colour	Black



Main applications



Applications Flexible cable suitable for reeling drum of tunnel boring machines and generally for tunnel application. Halogen free polyurethane sheathed version.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation and the screen over every conductor				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	- 25 to + 80
Ambient temperature: static condition	°C	- 50 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum torsional stress	°/m	± 25
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2 Halogen free according to IEC 60754-1 and IEC 60754-2	
Resistance to oil	According to IEC 60811-2-1	
Ozone resistance	According to IEC 60811-2-1	
Weather resistance	For indoor and outdoor application	

URSUS® MT BM PUR HF PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	45,4	48,8	2960	1125
3,6/6	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	46,9	50,4	3340	1575
3,6/6	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	50,0	53,6	3990	2250
3,6/6	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	55,6	59,4	5180	3150
3,6/6	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	59,9	63,9	6370	4275
3,6/6	3x120 + 3x70/3E + 3x2,5ST + ÜL	14,4	64,0	68,4	7730	5400
6/10	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	45,4	49,4	3000	1125
6/10	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	46,9	51,0	3380	1575
6/10	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	50,0	54,2	4030	2250
6/10	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	55,6	60,0	5220	3150
6/10	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	59,9	64,5	6410	4275
6/10	3x120 + 3x70/3E + 3x2,5ST + ÜL	14,4	64,0	69,1	7770	5400

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	48,0	51,5	3540	1125
8,7/15	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	49,5	53,1	3930	1575
8,7/15	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	54,4	58,2	4810	2250
8,7/15	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	58,2	62,2	5880	3150
8,7/15	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	61,4	65,7	6950	4275
12/20	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,8	50,5	54,1	3800	1125
12/20	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,8	52,3	56,0	4190	1575
12/20	3x50 + 3x25/3E + 3x2,5ST + ÜL	9,4	57,5	61,4	5120	2250
12/20	3x70 + 3x35/3E + 3x2,5ST + ÜL	11,2	61,0	65,3	6200	3150
12/20	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,7	66,4	70,9	7550	4275

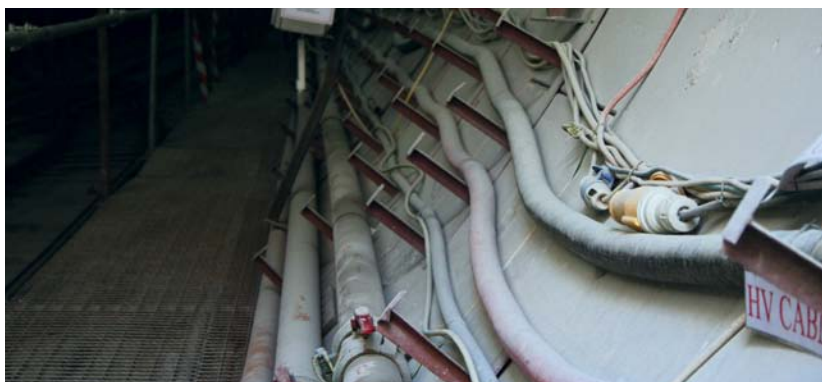
URSUS® MT TUNNEL V PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 605

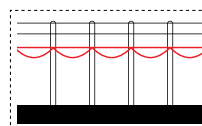


Cable construction

① Phase Conductors	Conductor material	Bare copper
	Conductor construction	Class 5, according to VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Construction	Individual copper wire screen
③ Control Conductors	Nominal cross section	2,5 mm ²
	Conductor material	Tinner copper
	Conductor construction	Class 5, according to VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
Central Filler	Material	Rubber compound on textile polyester support
Cores Assembly	Assembly	Twisted cores
	Separator on the twisted assembly	TNT tape wound on the twisted cores
④ First Inner Sheath	Sheath material	PVC, YM5 quality
⑤ Monitoring Conductor	Material	Copper wire
	Assembly	Screen over the first inner sheath
⑥ Second Inner Sheath	Material	PVC, YM5 quality
⑦ Armor	Material	Steel wire braid
	Assembly	Braid over the second inner sheath
⑧ Outer Sheath	Material	PVC, YM5 quality
	Colour	Red



Main applications



Applications Flexible cable for energy supply of MV equipment, in tunnelling and underground mining applications, according to VDE 0250 Part 605 Standard, as far as applicable.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation and the screen over every conductor				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	+ 5 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2
Weather resistance	For indoor and outdoor application

URSUS® MT TUNNEL V PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	47,2	52,1	4160	1125
3,6/6	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	49,0	54,0	4610	1575
3,6/6	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	52,5	57,8	5340	2250
3,6/6	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	56,1	61,6	6410	3150
3,6/6	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	60,3	66,2	7650	4275
3,6/6	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	63,8	70,0	9040	5400
3,6/6	3x150 + 3x70/3E + 3x2,5ST + ÜL	15,5	67,2	73,7	10190	6750
6/10	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	47,2	52,7	4200	1125
6/10	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	49,0	54,6	4650	1575
6/10	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	52,5	58,4	5380	2250
6/10	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	56,1	62,2	6450	3150
6/10	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	60,3	66,8	7690	4275
6/10	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	63,8	70,7	9080	5400
6/10	3x150 + 3x70/3E + 3x2,5ST + ÜL	15,5	67,2	74,4	10230	6750

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	50,5	55,6	4530	1125
8,7/15	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	52,3	57,6	5000	1575
8,7/15	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	55,8	61,3	5740	2250
8,7/15	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	59,3	65,2	6840	3150
8,7/15	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	62,8	68,9	8020	4275
8,7/15	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	66,2	72,6	9270	5400
12/20	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	52,9	58,2	4820	1125
12/20	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	54,7	60,2	5290	1575
12/20	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	58,3	64,0	6120	2250
12/20	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	61,7	67,8	7210	3150
12/20	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	65,2	71,5	8410	4275
12/20	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	68,7	75,3	9700	5400

URSUS® MT TUNNEL V ATOX PLUS 3,6/6 ÷ 12/20 kV

Based on DIN VDE 0250 Part 605



Cable construction

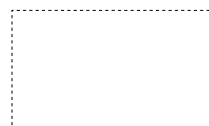
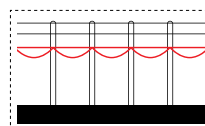
① Phase Conductors	Conductor material	Bare copper
	Conductor construction	Class 5, according to VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Construction	Individual copper wire screen
③ Control Conductors	Nominal cross section	2,5 mm ²
	Conductor material	Tinned copper
	Conductor construction	Class 5, according to VDE 0295 (IEC 60228)
	Insulation material	3GI3 quality rubber compound, according to VDE 0207 Part 20
Central Filler	Material	Rubber compound on textile polyester support
Cores Assembly	Assembly	Twisted cores
	Separator on the twisted assembly	TNT tape wound on the twisted cores
④ First Inner Sheath	Sheath material	M1 quality, according to CEI EN 50363, LSOH material
⑤ Monitoring Conductor	Material	Copper wire
	Assembly	Screen over the first inner sheath
⑥ Second Inner Sheath	Material	M1 quality, according to CEI EN 50363, LSOH material
⑦ Armor	Material	Steel wire braid
	Assembly	Braid over the second inner sheath
⑧ Outer Sheath	Material	M1 quality, according to CEI EN 50363, LSOH material
	Colour	Black

Upon request:

URSUS® MT TUNNEL V PUR HF PLUS: special version halogen free black polyurethane sheathed.



Main applications



Applications Flexible cable for energy supply of MV equipment, in tunnelling and underground mining applications.
LSOH Low smoke zero halogen sheathed version.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	11	17	24	29
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation and the screen over every conductor				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	+ 5 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2 Halogen free according to IEC 60754-1 and IEC 60754-2	
Resistance to oil	According to IEC 60811-2-1	
Ozone resistance	According to IEC 60811-2-1	
Weather resistance	For indoor and outdoor application	

URSUS® MT TUNNEL V ATOX PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	47,2	52,1	4120	1125
3,6/6	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	49,0	54,0	4570	1575
3,6/6	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	52,5	57,8	5300	2250
3,6/6	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	56,1	61,6	6370	3150
3,6/6	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	60,3	66,2	7600	4275
3,6/6	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	63,8	70,0	8990	5400
3,6/6	3x150 + 3x70/3E + 3x2,5ST + ÜL	15,5	67,2	73,7	10130	6750
6/10	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	47,2	52,7	4160	1125
6/10	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	49,0	54,6	4610	1575
6/10	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	52,5	58,4	5340	2250
6/10	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	56,1	62,2	6410	3150
6/10	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	60,3	66,8	7640	4275
6/10	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	63,8	70,7	9030	5400
6/10	3x150 + 3x70/3E + 3x2,5ST + ÜL	15,5	67,2	74,4	10170	6750

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	50,5	55,6	4030	1125
8,7/15	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	52,3	57,6	4480	1575
8,7/15	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	55,8	61,3	5210	2250
8,7/15	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	59,3	65,2	6230	3150
8,7/15	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	62,8	68,9	7350	4275
8,7/15	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	66,2	72,6	8540	5400
12/20	3x25 + 3x25/3E + 3x2,5ST + ÜL	6,1	52,9	58,2	4330	1125
12/20	3x35 + 3x25/3E + 3x2,5ST + ÜL	7,2	54,7	60,2	4780	1575
12/20	3x50 + 3x25/3E + 3x2,5ST + ÜL	8,9	58,3	64,0	5540	2250
12/20	3x70 + 3x35/3E + 3x2,5ST + ÜL	10,6	61,7	67,8	6570	3150
12/20	3x95 + 3x50/3E + 3x2,5ST + ÜL	12,3	65,2	71,5	7690	4275
12/20	3x120 + 3x70/3E + 3x2,5ST + ÜL	13,8	68,7	75,3	8920	5400

URSUS® MT TUNNEL I PLUS 3,6/6 ÷ 12/20 kV

Based on IEC 60502-2



Cable construction

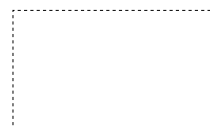
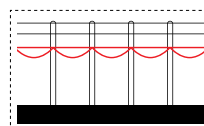
① Phase Conductors	Conductor material	Bare copper
	Conductor construction	Class 5, according to IEC 60228
	Insulation material	HEPR, G7 quality
	Semiconductive layers	Semiconductive tape over the conductor and inner and outer semiconductive rubber layer on the insulation
② Protec. Earth Conductors	Material	Bare copper
	Construction	Individual copper wire screen
③ Control Conductors	Nominal cross section	2,5 mm ²
	Conductor material	Tinned copper
	Conductor construction	Class 5, according to IEC 60228
	Insulation material	Rubber compound
Central Filler	Material	Rubber compound on textile polyester support
Cores Assembly	Assembly	Twisted cores
	Separator on the twisted assembly	TNT tape wound on the twisted cores
④ Inner Sheath	Sheath material	PVC, Rz quality
⑤ Armor	Material	Steel wire braid
	Assembly	Braid over the inner sheath
⑥ Outer Sheath	Material	PVC, Rz quality
	Colour	Red

Upon request:

URSUS® MT TUNNEL I ATOX PLUS: special version with LSOH outer sheath.



Main applications



Applications Flexible cable for energy supply of MV equipment, in tunnelling and underground mining applications, according to IEC 60502-2 Standard.

Electrical working data

Nominal rated voltage U_0 / U	kV	3,6/6	6/10	8,7/15	12/20
Test voltage	kV	12,5	21	30,5	42
Max AC voltage	kV	4,2/7,2	6,9/12	10,4/18	13,9/24
Electrical field control	Inner and outer semiconductive layers extruded in a single pass with the insulation and the screen over every conductor				
Current rating	A According to VDE 0298 Part 4				

Thermal working data

Maximum short circuit temperature	°C	250
Maximum working temp. on the conductor	°C	90
Ambient temperature: mobile condition	°C	+ 5 to + 80
Ambient temperature: static condition	°C	- 40 to + 80

Mechanical working data

Bending radius	mm	According to VDE 0298 Part 3
Maximum tensile load*	N/mm ²	15

* Referred to the total phase conductors cross section

Chemical working data

Burning behaviour	Flame retardant according to IEC 60332-1-2, EN 60332-1-2	
Weather resistance	For indoor and outdoor application	

URSUS® MT TUNNEL I PLUS 3,6/6 ÷ 12/20 kV

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
3,6/6	3x25 + 3x2,5ST	6,1	36,3	40,2	2250	1125
3,6/6	3x35 + 3x2,5ST	7,2	38,8	43,0	3200	1575
3,6/6	3x50 + 3x2,5ST	8,9	42,5	47,0	3860	2250
3,6/6	3x70 + 3x2,5ST	10,6	46,1	50,8	4630	3150
3,6/6	3x95 + 3x2,5ST	12,3	49,9	55,0	5680	4275
3,6/6	3x120 + 3x2,5ST	13,8	56,8	62,5	7010	5400
3,6/6	3x150 + 3x2,5ST	15,5	57,8	63,5	7910	6750
3,6/6	3x185 + 3x2,5ST	17,0	61,2	67,1	9060	8325
6/10	3x25 + 3x2,5ST	6,1	36,3	40,8	2290	1125
6/10	3x35 + 3x2,5ST	7,2	38,8	43,6	3240	1575
6/10	3x50 + 3x2,5ST	8,9	42,5	47,6	3900	2250
6/10	3x70 + 3x2,5ST	10,6	46,1	51,4	4670	3150
6/10	3x95 + 3x2,5ST	12,3	49,9	55,6	5720	4275
6/10	3x120 + 3x2,5ST	13,8	56,8	63,2	7050	5400
6/10	3x150 + 3x2,5ST	15,5	57,8	64,2	7950	6750
6/10	3x185 + 3x2,5ST	17,0	61,2	67,8	9100	8325

Voltage	Cores x cross section	Conductor Ø	Min overall Ø	Max overall Ø	Approx weight	Max tensile load
kV	Nr x mm ²	mm	mm	mm	kg/km	N
8,7/15	3x25 + 3x2,5ST	6,1	40,9	45,2	3040	1125
8,7/15	3x35 + 3x2,5ST	7,2	42,9	47,4	3470	1575
8,7/15	3x50 + 3x2,5ST	8,9	46,9	51,8	4280	2250
8,7/15	3x70 + 3x2,5ST	10,6	51,5	56,7	5300	3150
8,7/15	3x95 + 3x2,5ST	12,3	55,2	60,7	6420	4275
8,7/15	3x120 + 3x2,5ST	13,8	57,1	62,8	7120	5400
8,7/15	3x150 + 3x2,5ST	15,5	62,1	68,2	8600	6750
12/20	3x25 + 3x2,5ST	6,1	43,8	48,4	3410	1125
12/20	3x35 + 3x2,5ST	7,2	45,7	50,4	3830	1575
12/20	3x50 + 3x2,5ST	8,9	49,3	54,4	4570	2250
12/20	3x70 + 3x2,5ST	10,6	54,1	59,6	5760	3150
12/20	3x95 + 3x2,5ST	12,3	57,8	63,5	6890	4275
12/20	3x120 + 3x2,5ST	13,8	61,0	66,9	7650	5400

Technical data.

BENDING RADIUS

REELS APPLICATION DATA

ANTI-TORSIONAL BRAID

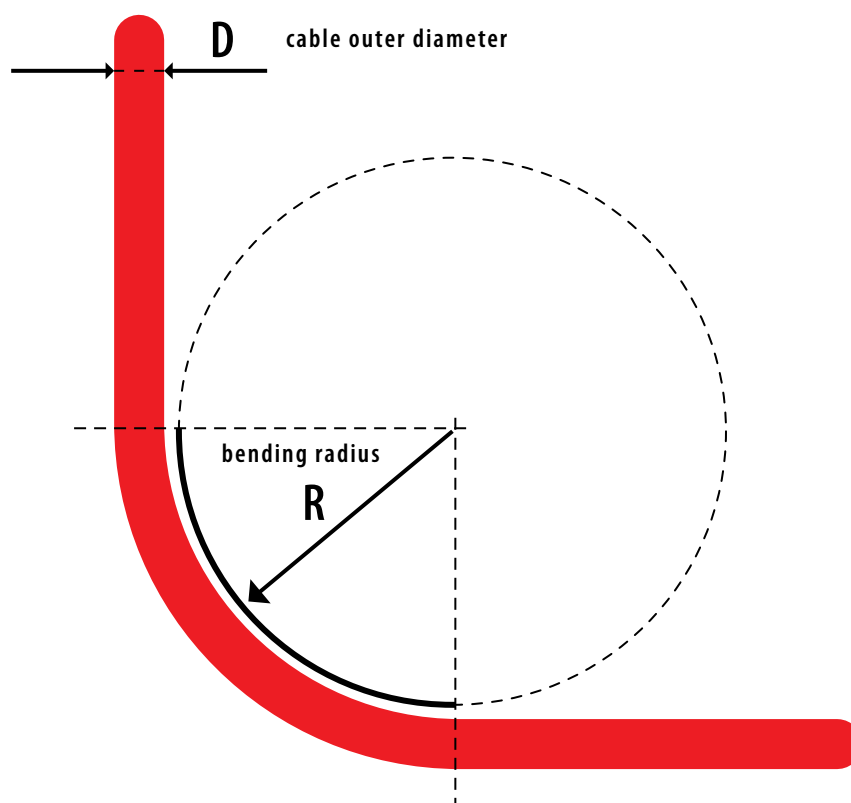
CONDUCTORS

CURRENT CARRYING CAPACITY - SHORT CIRCUIT CURRENT

VOLTAGE DROP

Minimum bending radius.

According to VDE 0298-3



Rated voltage U ₀ /U	Up to 0,6/1kV				Above 0,6/1kV
	Up to 8	from 8 to 12	from 12 to 20	above 20	
Cable diameter D mm					
Fixed installation	3 x D	3 x D	4 x D	4 x D	6 x D
Freely flexing	3 x D	4 x D	5 x D	5 x D	10 x D
For the entry e.g. at a center feed point	3 x D	4 x D	5 x D	5 x D	10 x D
Forced guidance with reeling operation	5 x D	5 x D	5 x D	6 x D	12 x D
Forced guidance with festoon operation	3 x D	4 x D	5 x D	5 x D	10 x D
Forced guidance with power tracks	4 x D	4 x D	5 x D	5 x D	10 x D
Forced guidance with sheaves and multiroller guides	7,5 x D	7,5 x D	7,5 x D	7,5 x D	15 x D
Forced guidance with cable tenders	7,5 x D	7,5 x D	7,5 x D	7,5 x D	15 x D

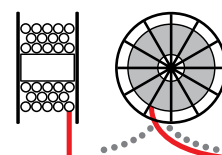
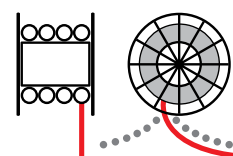
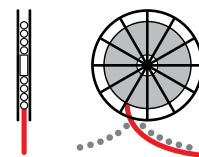
Reels application data.

Types

Monospiral drum (single spire multi layers) ideal to guarantee the heat dissipation and the control of irregular twisting during unwinding. The limit could be the cable's length in relation with the reel's diameter.

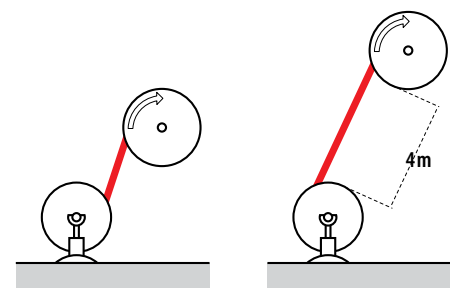
Multispiral drum (multi spires single layer) used in case of long cable lengths. It is important to ensure that the guide mechanism doesn't damage the cable during unwinding, for example: avoiding anomalous rub against the surface of the previous spire or irregular twisting. It is advisable to use maximum two layers to allow the thermal balance.

Cylindric drum (multi spires multi layers random wound) it is the cheaper reel but it doesn't guarantee the control over the layers of cable: the cable could be stacked, for example, on one side of the drum.



Installation & Use

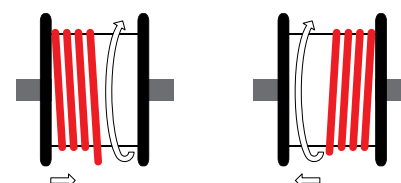
The correct installation method is to wind the cable directly to the operating drum avoiding reverse bending and, if possible, with a distance between the reels at least of 4 meters:



Incorrect

Correct

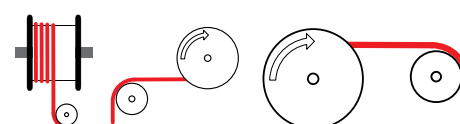
Aristoncavi's cables are produced with S stranding direction. In this case we recommend to start winding the cables, on the reeling drum, from the left side of reel as shown in the pictures:



Correct

Incorrect

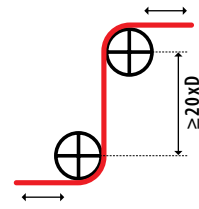
Changing direction during winding or unwinding, is a dangerous operation: it has to be gradual. The rollers and the shaves must be well positioned at an adequate distance in order to avoid mechanical stresses to the cores.



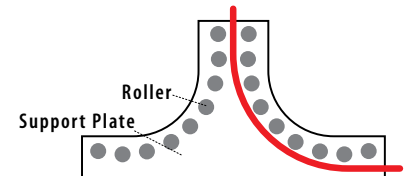
Incorrect

Correct

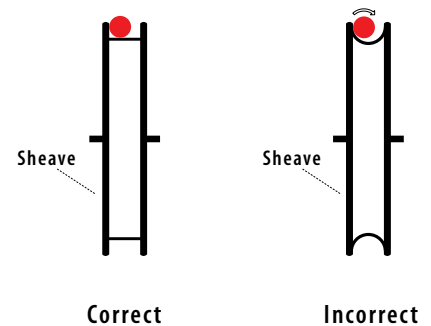
If the change of direction cannot be avoided, the minimum distance with double or S-type directional changer must be bigger than $20 \times D$ (D = overall cable diameter).



For a large diameter cable it would be better to use rollers to reduce the friction with the sheath during the change of direction.

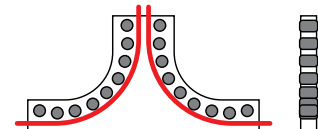


If sheaves are used, it is important to have a flat surface profile, to avoid unwanted rotations or twisting caused by the continuous clash with the sides of the sheave. In any case, the width of a cradle or that of a roller, should be 10-15% larger than the outer cable diameter to allow a correct running.



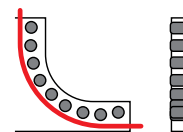
Cable guide

Safe and smooth guidance of the cable for end and centre feed.



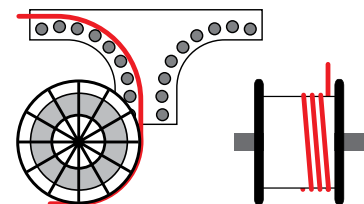
Roller guide

Defined guidance of the cable from reel body to feed point.



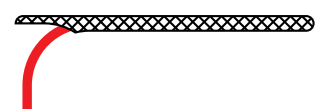
Cable feed point

Ideal cable guidance at feeding point for centre feed applications.

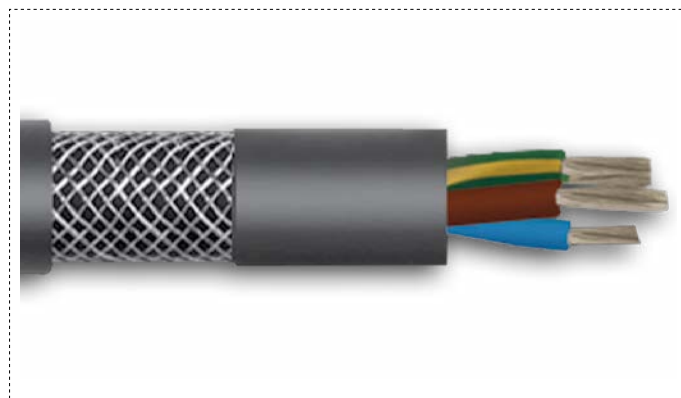
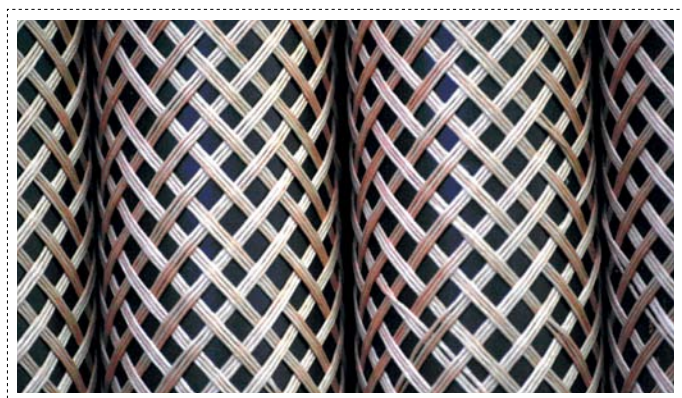


Cable mesh grip

Ideal tension relief for cable at feeding point. Safe and simple to handle, it spreads the forces over a wide surface area to prevent cable damage.



Anti-torsional braid.



A polyester braid is used between inner and outer sheath to avoid loops, anomalous twists and corkscrew effects.

Torsional stresses could be caused, for example, by: elevated dynamic stress, change of direction into different planes, high tensile load of the cable, not aligned guide pulley, wrong unwinding of the cable, etc...

The braid is designed with the following criteria: coverage percentage, braid angle, material, chemical compatibility between braid and sheaths. On request the braid could be made with Aramide textile, in order to perform an higher tensile strength.

Conductors.

FLEXIBLE COPPER CONDUCTORS CLASS 5 According to VDE 0295 (IEC 60228)

Cross section	Max diameter of wires	Max resistance of conductor at 20° C	
		bare copper	tinned copper
mm ²	mm	Ohm/Km	Ohm/Km
1,5	0,26	13,3	13,7
2,5	0,26	7,98	8,21
4	0,31	4,95	5,09
6	0,31	3,3	3,39
10	0,41	1,91	1,95
16	0,41	1,21	1,24
25	0,41	0,78	0,795
35	0,41	0,554	0,565
50	0,41	0,386	0,393
70	0,51	0,272	0,277
95	0,51	0,206	0,21
120	0,51	0,161	0,164
150	0,51	0,129	0,132
185	0,51	0,106	0,108
240	0,51	0,0801	0,0817
300	0,51	0,0641	0,0654

Current carrying capacity. Short circuit current.

CURRENT CARRYING CAPACITY UP TO 6/10 kV (VDE 0298-4) ambient temperature 30°C

Application										
Cross section	Laying on the floor	Free in air	Reeled							
			1 layer	2 layer	3 layer	4 layer	5 layer	6 layer	7 layer	
mm²	A	A	A	A	A	A	A	A	A	
1	19	20	15	12	9	8	7	5	4	
1,5	24	25	19	15	12	10	9	6	5	
2,5	30	32	24	18	15	13	11	8	7	
4	41	43	33	25	20	17	16	11	9	
6	53	56	42	32	26	22	20	14	12	
10	74	78	59	45	36	31	28	20	16	
16	99	104	79	60	49	42	38	27	22	
25	131	138	105	80	64	55	50	35	29	
35	162	170	130	99	79	68	62	44	36	
50	202	212	162	123	99	85	77	55	44	
70	250	263	200	153	123	105	95	68	55	
95	301	316	241	184	147	126	114	81	66	
120	352	370	282	215	172	148	134	95	77	
150	404	424	323	246	198	170	154	109	89	
185	461	484	369	281	226	194	175	124	101	
240	528	554	422	322	259	222	201	143	116	
300	608	638	486	371	298	255	231	164	134	

CURRENT CARRYING CAPACITY ABOVE 6/10 kV (VDE 0298-4) ambient temperature 30°C

Applica- tion								
Cross section	Laying on the floor	Reeled						
		1 layer	2 layer	3 layer	4 layer	5 layer	6 layer	7 layer
mm²	A	A	A	A	A	A	A	A
16	105	84	64	51	44	40	28	23
25	139	111	85	68	58	53	38	31
35	172	138	105	84	72	65	46	38
50	216	173	132	106	91	82	58	48
70	265	212	162	130	111	101	72	58
95	319	255	195	156	134	121	86	70
120	371	297	226	182	156	141	100	82
150	428	342	261	210	180	163	116	94
185	488	390	298	239	205	185	132	107
240	574	459	350	281	241	218	155	126
300	660	528	403	323	277	251	178	145

CORRECTION FACTORS (VDE 0298-4)

N° opera- ting cores	5	7	10	14	19	24	40	61									
Factor	0,75	0,65	0,55	0,50	0,45	0,40	0,35	0,30									
Ambient temp. (C°)	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	
Factor	1,15	1,12	1,08	1,04	1	0,96	0,91	0,87	0,82	0,76	0,71	0,65	0,58	0,50	0,41	0,29	

The maximum temperature allowed for rubber cables, during short circuit, is 250°C. The maximum thermal short circuit current allowed, for a time **t**, can be calculated by the following formulas, valid in adiabatic conditions :

$$I_{cc} = \frac{143 \cdot S}{\sqrt{t}}$$

Where :

I_{cc} = Short circuit current (A)

S = Conductor size (mm²)

t = Time period of short circuit (max 5 s)

Voltage drop.

Normally for an electric line or for power supply to a motor the voltage drop would be less than 5% of nominal voltage. To calculate the voltage drop must apply the following formula:

$$\Delta V = \frac{K \cdot I \cdot L}{1000}$$

Where :

ΔV = Voltage drop in Volts

K = Coefficient as per table

I = Current rate in Ampere

L = Length of the line in meters

THREE PHASE CABLE

Nominal cross section	Power factor			
mm²	Power factor 0,7	Power factor 0,8	Power factor 0,9	Power factor 1
1,5	20,65	23,56	26,47	29,32
2,5	12,43	14,17	15,91	17,59
4	7,75	8,82	9,89	10,92
6	5,19	5,90	6,60	7,27
10	3,04	3,44	3,84	4,20
16	1,96	2,21	2,45	2,66
25	1,29	1,45	1,60	1,71
35	0,95	1,06	1,16	1,23
50	0,69	0,77	0,83	0,87
70	0,51	0,56	0,60	0,61
95	0,41	0,45	0,47	0,47
120	0,34	0,36	0,38	0,36
150	0,29	0,31	0,32	0,29
185	0,25	0,27	0,27	0,24
240	0,21	0,22	0,21	0,18



CSQ: this certified that Aristoncavi S.p.A. implements a quality system in conformity with the standard UNI EN ISO 9001 to ensure quality in design, development, manufacture, selling/marketing and installation of the product.



ARISTONCAVI