



河南泰诺电缆有限公司

HENAN TANO CABLE CO.,LTD.



Henan Tano Cable Co., Ltd.(Tano Cable for short), is a leading and professional manufacturer of cable and wire with more than 20 years' history and manufacturing experience, located in Zhengzhou city which is the capital of Henan province, China.

Tano Cable aims at providing integral power solution for international customers. We are working together as one company to provide products and technologies for building, maintaining and advancing the power and information infrastructures that connect the world. We mainly have the following products with strong competitiveness: All Aluminum Conductors (AAC), All Aluminum Alloy Conductors (AAAC), Aluminum Conductors Steel Reinforcement (ACSR) , Aerial Bundled Cables (ABC), building wire, welding cable, control cable, instrument cable, rubber cable, PVC insulated power cable, XLPE insulated power cable up to 500KV, customer-tailored cable and cable accessories, conforming to many different Country or international standard, such as IEC, HAR, BS, DIN, ICEA, ASTM, SABS, AS/NZS, JIS and so on.

Tano Cable pays great importance on the quality. We have strong teams and equipments for both production and inspection. Moreover, we have been awarded many certificates of ISO, CE, SONCAP, others from China and abroad. We keep improving our quality management system to meet the client's final satisfaction.

Tano Cable has provided services to the global clients who working in all areas of the energy, construction, industrial, specialty and communications market, and obtained the client's trust and compliment.

Welcome your any inquiry! Welcome your any visit! Welcome your any contact! We will take our biggest sincerity to be your long-term friend and partner.





MV POWER CABLE to VDE 0276 STANDARD



Table of Contents

Single Core MV Power Cable.....	5
Three Core MV Power Cable.....	18



Single Core MV Power Cable to VDE 0276

APPLICATION

The single core MV power cable are designed for distribution of electrical power with nominal voltage U_0/U ranging from 3.8/6.6KV to 19/33KV and frequency 50Hz. They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD

DIN VDE 0276 Part 620 -622

HD 620 S1

CONSTRUCTION

TANO



- C PVC/PE/LSZH Separation Sheath (optional)✓
- A Aluminum Wire Armor (optional) and binder✓
- B Inner sheath or bedding✓
- L Metallic Screen✓
- E Insulation Screen✓
- XLPE/EPR/HEPR Insulation✓
- Conductor Screen✓
- Copper or aluminum conductor✓

Conductor: Stranded compacted circular copper or aluminum conductors according to IEC 60228 class 2 / VDE 0276 class 2 / VDE 0295 HD 383. All internal interstices of the conductor are filled with water blocking compound to prevent ingress of water through conductor during storage, handling, installation and operation of the cable.

Conductor Screen: The conductor screen consists of an extruded layer of non metallic, semi-conducting compound firmly bonded to the insulation to exclude all air voids. The screen has a minimum thickness of 0.3mm and the maximum volume resistivity of 500 Ohm-m at 90°C.

Insulation: Insulation is of extruded XLPE compound type 2X11 according to DIN VDE 0207 part 22 and HD 620.1 with high degree of cross-linking, free from contaminants, air voids and heat resistant by dry cured process. The nominal insulation wall thickness is shown in table 1.

Table 1. Insulation Thickness

Nom. Cross Section Area	Insulation Thickness at Nom. Voltage				
	3.6/6KV (Um=7.2kV)	6/10Kv (Um=12kV)	8.7/15kV (Um=17.5kV)	12/20kV (Um=24kV)	18/30kv (Um=36kV)
mm ²	mm	mm	mm	mm	mm
35	2.5	3.4	4.5	5.5	-
50	2.5	3.4	4.5	5.5	8
70	2.5	3.4	4.5	5.5	8
95	2.5	3.4	4.5	5.5	8
120	2.5	3.4	4.5	5.5	8
150	2.5	3.4	4.5	5.5	8
185	2.5	3.4	4.5	5.5	8
240	2.6	3.4	4.5	5.5	8
300	2.8	3.4	4.5	5.5	8
400	3	3.4	4.5	5.5	8

Insulation Screen: The insulation screen consists of extruded non metallic, semi-conducting compound extruded over the insulation. The extruded semi-conducting layer shall consist of bonded or cold strippable semi-conducting compound capable of removal for jointing or terminating. The minimum thickness is 0.3mm and the maximum volume resistivity of 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site.

Conducting Water Blocking Layer: The insulation screen may be covered by semi- conductive water blocking tape which will swell up under the influence of moisture of water to ensure longitudinal watertightness.

Metallic Screen: Copper wires are applied over the conducting water blocking layer with a minimum diameter of 0.5mm. And over the copper wires, copper tape with minimum thickness of 0.1mm is applied helically with overlap. Total cross section of metallic screen layer is shown in table 2. The screen can withstand fault current

to earth of 1000 A for one second at maximum temperature of 160°C. Minimum cross section of concentric conductor is according to DIN VDE 0273 & 0276 as shown.

Table 2. Minimum Total Cross Section of Metallic Screen

Nominal Cross-Section Area Of Cable	Minimum Cross-Section of Metallic Screen	DC Resistance of the Copper Wire Screen
mm ²	mm ²	mm
Up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51
800-1000	50	0.35

Separator/Water Blocking Layer: The metallic screen may be covered by non-conducting water blocking tape which will swell up under the influence of moisture of water to ensure longitudinal watertightness.

Separation Sheath (for armored cable): The separation sheath comprises a layer of extruded PVC, PE or LSZH, applied under the armor. Thickness of separation sheath as shown in table 3.

Table 3. Separation Sheath Thickness

Core Diameter		Approx. Thickness of Inner Sheath
mm		mm
>	<	
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2

Armour(for armored cable): The armor consists of round aluminum wire armor applied helically over an extruded separation sheath.

Table 4. Round Armour Wire Diameter

Fictitious Diameter Under the Armour	Armour Wire Diameter
mm	mm
>	<

-	10	0.8
10	15	1.25
15	25	1.6
25	35	2
35	60	2.5
60	-	3.15

Outer Sheath: Overall sheath comprises a layer of extruded PR compound DMP2 according to HD620.1 and 2YM3 type to DIN VDE 0276 Part 3, or PVC compound DMV6 according to HD620.1 and YM5 to DIN VDE 0276 Part 6. Normal wall thickness is 2.5mm (1/500mm 18/30sq 2.6mm), suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

Service Life: 30years

PHYSICAL PROPERTIES

Operating Temperature: up to 90°C

Temperature Range: -5°C (PVC sheath); -20°C (PE sheath)

Short Circuit Temperature: 250°C (short circuit duration up to 5 seconds)

Bending Radius: 15 x OD (Cable without metal sheath)

30 x OD (Cable with aluminum sheath)

Table 5. Nominal/Operating/Testing Voltages

Nominal Voltage U ₀ /U	Operating Voltage (max)	Testing Voltage
3.6/6KV	8KV	10KV
6/10KV	12KV	15KV
8.7/15KV	18KV	22.5KV
12/20KV	24KV	30KV
18/30KV	36KV	45KV

TYPE CODES:

Cores

N According to VDE Standard (No abbreviation for copper conductor)

A Aluminum Conductor

2X XLPE Insulation

Y PVC Insulation

Screen

S Screen of copper wires and copper tape, helically wound.

SE Screen of copper wire plus copper tape over each individual cores, helically wound

(F) Longitudinally waterproof screen.

Concentric Conductor Screen

C Concentric conductor screen of copper wires and copper tape, helically wound.

CE Concentric conductor screen of copper wire plus copper tape over each individual cores, helically wound.

Jacket

2Y PE Jacket

Y PVC Jacket

H LSZH Jacket



TANO
C A B L E

TECHNICAL DATA

Single Core 1.8/3KV (Um=3.6KV)

Dimensional Data

Nom. Cross- Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Nom. Overall Diameter	Approx. Weight					
						N2XSY/ N2XSH Cu	NA2XSY/ NA2XSH Al	N2XS2Y Cu	NA2XS2Y Al	N2XS (F) 2Y Cu	NA2XS (F) 2Y Al
						kg / km	kg / km	kg / km	kg / km	kg / km	kg / km
25	2	0.1	16	1.4	13	500	180	480	140	500	230
35	2	0.1	16	1.4	14	620	280	600	240	620	330
50	2	0.1	16	1.4	15	700	380	750	290	750	430

70	2	0.1	16	1.5	17	900	480	800	380	1000	560
95	2	0.1	16	1.5	19	1200	590	1050	460	1300	670
120	2	0.1	16	1.6	21	1450	700	1300	550	1500	800
150	2	0.1	25	1.6	22	1700	800	1550	650	1800	900
185	2	0.1	25	1.7	24	2050	850	1900	750	2150	950
240	2	0.1	25	1.8	27	2550	1050	2350	900	2650	1150
300	2	0.1	25	1.8	29	3150	1250	2950	1050	3250	1350
400	2	0.1	35	1.9	32	3950	1550	3800	1450	4100	1650
500	2.2	0.1	35	2	35	5000	2000	4800	1800	5200	2150
630	2.4	0.1	35	2.2	38	6200	2200	6300	2100	6400	2350
800	2.6	0.1	35	2.3	44	8000	2900	7900	2800	8200	3050

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

Electrical Data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
												Trefoil		Flat Spaced	
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	cu	AL	cu	AL
mm ²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	μΩ/m	nH/m	μΩ/m	μΩ/m	μΩ/m	μΩ/m
25	727/1200	929/1538	3.6/2.3	222	0.32	2.6	0.3	131	185	345	535	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	251	0.35	2.6	0.4	122	178	327	524	679	1121	695	1131
50	387/641	494/822	6.8/4.4	281	0.39	2.6	0.4	116	172	313	514	511	834	527	844
70	268/443	343/568	9.8/6.3	341	0.45	2.6	0.5	110	165	300	495	364	583	386	597
95	193/320	248/410	13.3/8.5	397	0.5	2.6	0.5	104	160	287	485	272	427	300	446
120	153/253	196/325	17.2/11.0	430	0.55	2.6	0.6	104	159	280	475	225	345	257	367
150	124/206	159/265	21.2/13.5	464	0.59	4.3	0.6	100	156	274	465	193	287	229	313
185	99.1/164	128/211	26.6/17.0	513	0.65	4.3	0.7	98	154	267	459	165	237	206	267
240	75.4/125	96/161	34.9/22.3	573	0.7	4.3	0.9	94	150	260	455	140	191	185	226
300	60.1/100	80/130	43.8/28.0	652	0.72	4.3	1	91	147	253	445	128	163	174	203
400	47.0/77.8	64/102	57.3/36.6	727	0.75	5.8	1.1	90	147	248	435	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	754	0.79	5.8	1.2	89	145	245	425	105	124	158	171
630	28.3/46.9	42/64	91.2/56.3	786	0.87	5.8	1.3	86	143	243	415	97	110	151	160

Single Core 3.6/6KV (Um=7.2 KV)

Dimensional Data

Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Nom. Overall Diameter	Approx. Weight					
						N2XS2Y/ N2XSH Cu	NA2XS2Y/ NA2XSH Al	N2XS2Y Cu	NA2XS2Y Al	N2XS (F) 2Y Cu	NA2XS (F) 2Y Al
mm²	mm	mm	mm²	mm	mm	kg / km	kg / km	kg / km	kg / km	kg / km	kg / km
25	2.5	0.1	16	1.5	18	700	480	600	550	700	560
35	2.5	0.1	16	1.6	20	820	580	800	560	900	660
50	2.5	0.1	16	1.6	21	1000	680	900	570	1050	750
70	2.5	0.1	16	1.7	23	1200	770	1100	650	1300	850
95	2.5	0.1	16	1.7	24	1500	890	1350	760	1550	990
120	2.5	0.1	16	1.8	26	1850	1000	1700	850	1900	1150
150	2.5	0.1	25	1.8	27	2100	1100	1950	1050	2200	1250
185	2.5	0.1	25	1.9	29	2450	1250	2300	1200	2550	1300
240	2.6	0.1	25	1.9	32	3050	1550	2850	1400	3150	1650
300	2.8	0.1	25	2	35	3650	1850	3450	1650	3750	1950
400	3	0.1	35	2.1	38	4550	2250	4400	2050	4700	2350
500	3.2	0.1	35	2.3	42	5700	2700	5500	2500	5900	2850
630	3.2	0.1	35	2.4	48	7090	3020	6890	2820	7290	3200
800	3.2	0.1	35	2.5	52	8900	3700	8700	3500	9100	3850

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

Electrical Data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	μΩ/m	nH/m	CU	AL	CU	AL
16	1150/1910	1460/2420	2.2/1.4	232	0.29	2.6	0.4	152	205	410	600	1462	2411	1478	2420

25	727/1200	927/1538	3.6/2.3	262	0.32	2.6	0.4	142	196	400	590	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	291	0.35	2.6	0.5	133	187	390	580	679	1121	695	1131
50	387/641	494/822	6.8/4.4	321	0.39	2.6	0.5	121	179	380	570	511	834	527	844
70	268/443	343/568	9.8/6.3	371	0.45	2.6	0.6	115	173	370	550	364	583	386	597
95	193/320	248/410	13.3/8.5	417	0.5	2.6	0.6	110	168	350	540	272	427	300	446
120	153/253	196/325	17.2/11.0	459	0.55	2.6	0.7	107	165	340	520	225	345	257	367
150	124/206	159/265	21.2/13.5	494	0.59	4.3	0.7	103	161	330	510	193	287	229	313
185	99.1/164	128/211	26.6/17.0	543	0.65	4.3	0.8	100	158	320	500	165	237	206	267
240	75.4/125	98/161	34.9/22.3	583	0.7	4.3	0.9	97	155	310	490	140	191	185	226
300	60.1/100	80/130	43.8/28.0	602	0.72	4.3	1	95	153	300	490	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	627	0.75	5.8	1.1	92	150	290	480	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	654	0.79	5.8	1.2	90	147	290	470	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	726	0.87	5.8	1.3	87	145	280	460	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	786	0.91	5.8	1.4	85	143	270	460	92	101	147	153

* For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.

Single Core 6/10KV (Um=12 KV)

Dimensional Data

Nom. Cross- Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Nom. Overall Diameter	Approx. Weight					
						N2XS2Y/ N2XSH Cu	NA2XS2Y/ NA2XSH Al	N2XS2Y Cu	NA2XS2Y Al	N2X (F) 2Y Cu	NA2XS (F) 2Y Al
mm²	mm	mm	mm	mm	mm	kg / km	kg / km	kg / km	kg / km	kg / km	kg / km
25	3.4	0.1	16	1.6	25	820	580	720	550	900	650
35	3.4	0.1	16	1.6	25	920	680	900	570	980	750
50	3.4	0.1	16	1.7	26	1100	780	950	670	1150	850
70	3.4	0.1	16	1.7	28	1300	870	1200	750	1400	950
95	3.4	0.1	16	1.8	30	1600	990	1450	860	1650	1100
120	3.4	0.1	16	1.8	32	1950	1100	1800	950	2050	1250
150	3.4	0.1	25	1.9	33	2200	1200	2050	1150	2300	1350
185	3.4	0.1	25	1.9	34	2550	1350	2400	1300	2650	1500
240	3.4	0.1	25	2	36	3150	1650	2950	1500	3250	1750
300	3.4	0.1	25	2.1	38	3750	1950	3550	1750	3850	2050
400	3.4	0.1	35	2.2	43	4650	2350	4500	2150	4800	2450
500	3.4	0.1	35	2.3	45	5800	2800	5700	2600	6000	2950
630	3.4	0.1	35	2.4	50	7300	3100	7010	2950	7500	3300
800	3.4	0.1	35	2.5	50	9100	3900	8900	3700	9300	4000

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

Electrical Data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance pF/m	Charging Current mA/m	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
								CU	AL	CU	AL	CU	AL	CU	AL
mm ²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	μΩ/m	nH/m	μΩ/m	μΩ/m	μΩ/m	μΩ/m
25	727/1200	927/1538	3.6/2.3	208	0.42	2.6	0.5	144	210	460	660	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	229	0.46	2.6	0.6	136	200	440	640	679	1121	695	1131
50	387/641	494/822	6.8/4.4	252	0.5	2.6	0.6	131	195	420	620	511	834	527	844
70	268/443	343/568	9.8/6.3	288	0.58	2.6	0.7	122	188	390	600	364	583	386	597
95	193/320	248/410	13.3/8.5	323	0.65	2.6	0.7	122	182	390	580	272	427	300	446
120	153/253	196/325	17.2/11.0	353	0.71	2.6	0.8	116	172	370	550	225	345	257	367
150	124/206	159/265	21.2/13.5	380	0.76	4.3	0.8	110	166	350	530	193	287	229	313
185	99.1/164	128/211	26.5/17.0	416	0.83	4.3	0.9	107	166	340	530	165	237	206	267
240	75.4/125	98/161	34.9/22.3	460	0.92	4.3	0.9	104	163	330	520	140	191	185	226
300	60.1/100	80/130	43.8/28.0	506	1.01	4.3	1.0	100	157	320	500	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	561	1.12	5.8	1.1	94	154	300	490	113	141	164	184
500	36.6/60.5	51/81.0	72.3/46.2	619	1.24	5.8	1.2	91	151	290	480	105	124	158	171
630	28.3/46.9	42/64.0	91.2/58.3	698	1.37	5.8	1.3	91	148	290	470	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	780	1.39	5.8	1.4	88	144	280	470	92	101	147	153

Single Core 8.7/15KV (Um=17.5KV)

Dimensional Data

Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Nom. Overall Diameter	Approx. Weight					
						N2XSY/ N2XSH Cu	NA2XSY/ NA2XSH Al	N2XS2Y Cu	NA2XS2Y Al	N2XS (F) 2Y Cu	NA2XS (F) 2Y Al
						kg / km	kg / km	kg / km	kg / km	kg / km	kg / km
25	4.5	0.1	16	1.7	26	900	600	880	500	900	700

35	4.5	0.1	16	1.7	26	1020	700	1000	600	1060	800
50	4.5	0.1	16	1.7	27	1200	880	1050	770	1250	950
70	4.5	0.1	16	1.8	29	1400	970	1300	850	1500	1050
95	4.5	0.1	16	1.8	31	1700	1090	1550	960	1750	1200
120	4.5	0.1	16	1.9	32	2050	1200	1900	1150	2100	1300
150	4.5	0.1	25	1.9	33	2300	1400	2150	1250	2400	1500
185	4.5	0.1	25	2	35	2650	1650	2500	1400	2750	1750
240	4.5	0.1	25	2.1	37	3250	1750	3050	1600	3350	1850
300	4.5	0.1	25	2.1	39	3850	2050	3650	1850	3950	2150
400	4.5	0.1	35	2.3	43	4850	2550	4700	2250	5000	2550
500	4.5	0.1	35	2.3	45	5900	2900	5700	2600	6100	3050
630	4.5	0.1	35	2.5	51	7500	3200	7200	3100	8000	3400
800	4.5	0.1	35	2.6	51	9300	4200	9100	4000	9500	4300

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

Electrical Data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance pF/m	Charging Current mA/m	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil Spaced	Flat Spaced	Trefoil Spaced	Flat Spaced	Trefoil		Flat Spaced	
mm ²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	μΩ/m	nH/m	μΩ/m	μΩ/m	μΩ/m	μΩ/m
25	727/1200	927/1538	3.6/2.3	171	0.47	2.6	0.6	150	210	480	680	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	187	0.51	2.6	0.6	141	207	460	660	679	1121	695	1131
50	387/641	494/822	6.8/4.4	204	0.57	2.6	0.7	138	195	440	640	511	834	527	844
70	268/443	343/568	9.8/6.3	232	0.63	2.6	0.7	132	188	420	600	364	583	386	597
95	193/320	248/410	13.3/8.5	258	0.71	2.6	0.8	126	182	400	580	272	427	300	446
120	153/253	196/325	17.2/11.0	281	0.74	2.6	0.8	119	179	380	570	225	345	257	367
150	124/206	159/265	21.2/13.5	301	0.79	4.3	0.9	113	176	360	560	193	287	229	313
185	99.1/164	128/211	26.6/17.0	329	0.87	4.3	0.9	110	170	350	540	165	237	206	267
240	75.4/125	98/161	34.9/22.3	363	0.96	4.3	1	107	166	340	530	140	191	185	226
300	60.1/100	80/130	43.8/28.0	398	1.03	4.3	1.1	104	160	330	510	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	439	1.17	5.8	1.2	97	157	310	500	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	483	1.28	5.8	1.3	94	154	300	490	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	534	1.42	5.8	1.4	91	151	290	480	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	590	1.61	5.8	1.4	91	147	290	470	92	101	147	153

Single Core 12/20KV (Um=24KV)

Dimensional Data

Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Nom. Overall Diameter	Approx. Weight					
						N2XS2Y/ N2XSH Cu	NA2XS2Y/ NA2XSH Al	N2XS2Y Cu	NA2XS2Y Al	N2XS (F) 2Y Cu	NA2XS (F) 2Y Al
mm²	mm	mm	mm	mm	mm	kg / km	kg / km	kg / km	kg / km	kg / km	kg / km
25	5.5	0.1	16	1.8	29	1000	750	900	630	1100	850
35	5.5	0.1	16	1.8	30	1100	850	1050	730	1200	950
50	5.5	0.1	16	1.8	31	1250	970	1150	830	1350	1050
70	5.5	0.1	16	1.9	33	1500	1100	1350	920	1600	1200
95	5.5	0.1	16	1.9	34	1800	1200	1650	1050	1900	1300
120	5.5	0.1	16	2	35	2150	1350	1900	1150	2250	1450
150	5.5	0.1	25	2	37	2400	1500	2250	1350	2500	1650
185	5.5	0.1	25	2.1	38	2800	1700	2600	1550	2900	1800
240	5.5	0.1	25	2.1	42	3400	1900	3200	1750	3500	2050
300	5.5	0.1	25	2.2	43	4000	2200	3800	2000	4150	2300
400	5.5	0.1	35	2.3	44	4950	2600	4750	2400	5100	2800
500	5.5	0.1	35	2.4	46	6050	3000	5800	2800	6200	3200
630	5.5	0.1	35	2.5	50	8150	3600	8050	3400	8300	3750
800	5.5	0.1	35	2.6	53	9800	4400	9450	4200	9800	4300

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

Electrical Data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	mH/m	μΩ/m	mH/m	Cu	AL	Cu	AL
25	727/1200	927/1538	3.6/2.3	142	0.62	2.6	0.6	162	214	490	680	936	1544	952	1554

35	524/868	668/1113	5.0/3.2	162	0.65	2.6	0.7	150	207	470	660	679	1121	695	1131
50	387/641	494/822	6.8/4.4	177	0.71	2.6	0.8	141	201	450	640	511	834	527	844
70	268/443	343/568	9.8/6.3	200	0.8	2.6	0.8	135	195	430	620	364	583	386	597
95	193/320	248/410	13.3/8.5	222	0.89	2.6	0.9	129	188	410	600	272	427	300	446
120	153/253	196/325	17.2/11.0	241	0.96	2.6	0.9	122	182	390	580	225	345	257	367
150	124/206	159/265	21.2/13.5	257	1.03	4.3	1	116	176	370	560	193	287	229	313
185	99.1/164	128/211	26.6/17.0	280	1.12	4.3	1	116	173	370	550	165	237	206	267
240	75.4/125	98/161	34.9/22.3	307	1.23	4.3	1.1	110	170	350	540	140	191	185	226
300	60.1/100	80/130	43.8/28.0	336	1.34	4.3	1.2	107	166	340	530	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	370	1.48	5.8	1.3	100	160	320	510	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	406	1.62	5.8	1.4	97	154	310	490	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	449	1.8	5.8	1.5	94	151	300	480	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	490	1.85	5.8	1.6	91	151	290	480	92	101	147	153

Single Core 18/30KV (Um=36KV)

Dimensional Data

Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Nom. Overall Diameter	Approx. Weight					
						N2XS(Y)/N2XSH Cu	NA2XS(Y)/NA2XSH Al	N2XS2Y Cu	NA2XS2Y Al	N2XS (F) 2Y Cu	NA2XS (F) 2Y Al
						kg / km	kg / km	kg / km	kg / km	kg / km	kg / km
25	8	0.1	16	1.9	30	1300	1050	1100	900	1400	1150
35	8	0.1	16	1.9	30	1400	1150	1200	1000	1500	1250
50	8	0.1	16	2	35	1550	1250	1350	1100	1650	1350
70	8	0.1	16	2	37	1750	1350	1600	1200	1900	1450
95	8	0.1	16	2.1	39	2050	1500	1900	1300	2150	1600
120	8	0.1	16	2.1	41	2350	1600	2150	1450	2450	1750
150	8	0.1	25	2.2	42	2700	1850	2550	1650	2750	1950
185	8	0.1	25	2.2	44	3100	2000	2900	1800	3150	2150
240	8	0.1	25	2.3	46	3700	2250	3500	2050	3800	2400
300	8	0.1	25	2.4	49	4350	2550	4150	2300	4400	2700
400	8	0.1	35	2.5	52	5350	3000	5100	2750	5450	3200
500	8	0.1	35	2.6	54	6450	3450	6200	3150	6550	3650
630	8	0.1	35	2.7	59	8300	3780	8100	3600	8600	4100
800	8	0.1	35	2.8	59	9900	4500	9700	4320	10300	4800

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

Electrical Data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat	Trefoil	Flat	Trefoil		Flat spaced	
mm ²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	μΩ/m	nH/m	μΩ/m		μΩ/m	
25	727/1200	927/1538	3.6/2.3	121	0.71	2.6	0.9	159	229	530	720	686	1247	759	1146
50	387/641	494/822	6.8/4.4	138	0.83	2.6	1	151	214	480	680	511	834	527	844
70	268/443	343/568	9.8/6.3	154	0.92	2.6	1	144	201	460	640	364	583	386	597
95	193/320	248/410	13.3/8.5	169	1.01	2.6	1.1	138	195	440	620	272	427	300	446
120	153/253	196/325	17.2/11.0	183	1.1	2.6	1.1	132	188	420	600	225	345	257	367
150	124/206	159/265	21.2/13.5	194	1.16	4.3	1.2	126	182	400	580	193	287	229	313
185	99.1/164	128/211	26.6/17.0	210	1.26	4.3	1.2	122	182	390	580	165	237	206	267
240	75.4/125	98/161	34.9/22.3	229	1.37	4.3	1.3	119	176	380	560	140	191	185	226
300	60.1/100	80/130	43.8/28.0	249	1.49	4.3	1.4	113	173	360	550	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	273	1.64	5.8	1.5	107	163	340	520	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	298	1.79	5.8	1.6	104	163	330	520	105	124	158	171
630	28.3/46.9	42/64	91.2/58.5	327	1.96	5.8	1.7	99	160	320	510	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	350	1.98	5.8	1.8	98	154	310	490	92	101	147	153

Current Rating for Single Core 1.8/3KV(Um=3.6KV) to 18/30KV(Um=36KV) XLPE Insulation

Nom. Cross-Section Area	Buried direct in Ground				Laid in Single Way Duct				Laid in Air					
	Trefoil		Flat spaced		Trefoil		Flat touching		Trefoil		Flat Touching		Flat spaced	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm ²	A		A		A		A		A		A		A	
10	84	59	87	62	78	55	98	56	103	75	106	77	122	88
16	109	84	113	88	103	80	104	81	125	97	128	99	150	116
25	140	108	144	112	132	102	133	103	163	127	167	130	196	153
35	166	129	172	134	157	122	159	123	198	154	203	157	238	185
50	196	152	203	157	186	144	188	146	238	184	243	189	286	222
70	239	186	246	192	227	176	229	178	296	230	303	236	356	278
95	285	221	293	229	271	210	274	213	361	280	369	287	434	338
120	323	252	332	260	308	240	311	242	417	324	426	332	500	391

150	361	281	366	288	343	267	347	271	473	368	481	376	559	440
185	406	317	410	324	387	303	391	307	543	424	550	432	637	504
240	469	367	470	373	447	351	453	356	641	502	647	511	745	593
300	526	414	524	419	504	397	510	402	735	577	739	586	846	677
400	590	470	572	466	564	451	571	457	845	673	837	676	938	769
500	650	530	672	546	604	504	661	537	935	773	938	776	1118	919
630	700	600	882	646	654	554	771	617	1045	883	1048	886	1318	1089
800	750	660	1002	756	694	594	871	717	1145	983	1148	986	1528	1279
1000	800	720	1112	856	724	644	971	807	1235	1083	1238	1086	1738	1469

Three Core MV Power Cable to VDE 0276

APPLICATION

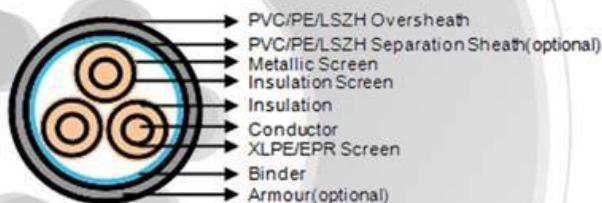
The three core MV power cable are designed for distribution of electrical power with nominal voltage U_0/U ranging from 3.6/6.6KV to 19/33KV and frequency 50Hz. They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD

DIN VDE 0276 Part 620 -622

HD 620 S1.

CONSTRUCTION



Conductor: Stranded compacted circular copper or aluminum conductors according to IEC 60228 class 2 /

VDE 0276 class 2. VDE 0295 HD 383. All internal interstices of the conductor are filled with water blocking compound to prevent ingress of water through conductor during storage, handling, installation and operating of the cable.

Conductor Screen: The conductor screen consists of an extruded layer of non metallic, semi-conducting compound firmly bonded to the insulation to exclude all air voids. The screen has a minimum thickness of 0.3mm and the maximum volume resistivity of 500 Ohm-m at 90°C.

Insulation: Insulation is of extruded XLPE compound type 2X11 according to DIN VDE 0207 part 22 and HD 620.1 with high degree of cross-linking, free from contaminants, air voids and heat resistant by dry cured process. The nominal insulation wall thickness is shown in table 1.

Table 1. Insulation Thickness

Nom. Cross-Section Area	Insulation Thickness at Nom. Voltage				
	3.6/6kV (Um=7.2kV)	6/10KV (Um=12KV)	8.7/15KV (Um=17KV)	12/20KV (Um=24KV)	18/30KV (Um=36KV)
mm²	mm	mm	mm	mm	mm
	XLPE	XLPE	XLPE	XLPE	XLPE
35	2.5	3.4	4.5	5.5	-
50	2.5	3.4	4.5	5.5	8
70	2.5	3.4	4.5	5.5	8
95	2.5	3.4	4.5	5.5	8
120	2.5	3.4	4.5	5.5	8
150	2.5	3.4	4.5	5.5	8
185	2.5	3.4	4.5	5.5	8
240	2.6	3.4	4.5	5.5	8
300	2.8	3.4	4.5	5.5	8
400	3	3.4	4.5	5.5	8

Insulation Screen: The insulation screen consists of extruded non metallic, semi-conducting compound extruded over the insulation. The extruded semi-conducting layer shall consist of bonded or cold strippable semi-conducting compound capable of removal for jointing or terminating. The minimum thickness is 0.3mm and the maximum volume resistivity of 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site.

Conducting Water Blocking Layer: The insulation screen may be covered by semi-conductive water

blocking tape which will swell up under the influence of moisture of water to ensure longitudinal watertightness.

Metallic Screen: Copper wires are applied over the conducting water blocking layer with a minimum diameter of 0.5mm. And over the copper wires, copper tape with minimum thickness of 0.1mm is applied helically with overlap. Total cross section of metallic screen layer is shown in table 2. The screen can withstand of fault current to earth of 1000 A for one second at maximum temperature of 160°C. Minimum cross section of concentric conductor is according to DIN VDE 0273 & 0276 as shown.

Table 2. Minimum Total Cross Section of Metallic Screen

Nominal Cross-Section Area Of Cable	Minimum Cross-Section of Metallic Screen	DC Resistance of the Copper Wire Screen
mm ²	mm ²	mm
Up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51
800-1000	50	0.35

Separator / Water Blocking Layer: The metallic screen may be covered by non-conducting water blocking tape which will swell up under the influence of moisture of water to ensure longitudinal watertightness.

Separation Sheath (for armored cable): The separation sheath comprises a layer of extruded PVC, PE or LSZH, applied under the armor. Thickness of separation sheath is shown in table 3.

Table 3. Separation Sheath Thickness

Cores Diameter		Approx.Thickness of Inner Sheath
mm		mm
>	<	
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2

Armour(for armoured cable):

The armour consists of:

- 1) Double layers of galvanized steel tape are applied helically with proper inner overlapping over an extruded separation sheath. Thickness of the steel tape is shown in table 4.

Table 4. Galvanized Steel Tape Thickness

Inner Diameter		Thickness of Galvanized Steel Tape
mm		mm
>	<	
-	30	0.2
30	70	0.5
70	-	0.8

- 2) Galvanized flat steel wires with thickness of 0.8 mm are applied helically over the surface of inner sheath with minimum of 90% coverage. And galvanized Steel tape with nominal thickness of 0.3 mm is applied helically with 50% coverage to cover the surface of the flat wires.

Outer Sheath: Overall sheath comprises a layer of extruded PE compound DMP2 according to HD620.1 and 2YM3 type to DIN VDE 0276 Part 3, or PVC compound DMV6 according to HD620.1 and YM5 to DIN VDE 0276 Part 6. Normal wall thickness is 2.5mm (1/500mm 18/30sq 2.6mm), suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

PHYSICAL PROPERTIES:

Operating Temperature: up to 90°C

Temperature Range: -5°C (PVC sheath); -20°C (PE sheath)

Short Circuit Temperature: 250°C (short circuit duration up to 5 seconds)

Bending Radius: 15 x OD (Cable without metal sheath)

30 x OD (Cable with aluminium sheath)

Table 5. Nominal /Operating /Testing Voltages

Nominal Voltage Uo/U	Operating Voltage (Um)	Testing Voltage
3.6/6KV	8KV	12.5KV
6/10KV	12KV	21KV

8.7/15KV	18KV	30.5KV
12/20KV	24KV	42KV
18/30KV	36KV	63KV

Service Life: 30years

TYPE CODES:

Conductor

- N According to VDE Standard (No abbreviation for copper conductor)
- A Aluminum conductor
- Copper conductor

Insulation

2X XLPE

Screen

- C Concentric conductor of copper
- CE Concentric conductor of copper over each individual core
- S Screen of copper wires & copper tape, helically wound
- SE Screen of copper wires over each individual cores
- (G) Longitudinally waterproof

Armour

- F Armour of galvanized flat steel wire
- G Counter Helix of galvanized steel tape
- B Steel tape armouring
- R Armour of galvanized round steel wire

Sheath

- 2Y PE
- Y PVC



- H LSZH
- K Lead sheath
- KL Aluminum sheath

TECHNICAL DATA

Three Core 3.6/6KV (Um=7.2KV)

N2XSEY

NA2XSEY

Dimensional Data

Nom. Cross- Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								Cu	Al
mm²	mm	mm	mm	mm²	mm	mm	mm	kg / km	kg / km
25	6.05	2.5	0.1	16	12.5	1.5	37	2100	1600
35	7.1	2.5	0.1	16	13.5	1.6	39	2500	1800
50	8.25	2.5	0.1	16	14.7	1.6	42	3000	2100
70	9.9	2.5	0.1	16	16.3	1.7	46	3800	2500
95	11.7	2.5	0.1	16	18.1	1.7	50	4800	3000
120	13.1	2.5	0.1	16	19.5	1.8	53	5800	3500
150	14.3	2.5	0.1	25	20.7	1.8	56	6700	3900
185	16.3	2.5	0.1	25	22.7	1.9	60	8100	4600
240	18.7	2.6	0.1	25	25.3	1.9	66	10200	5600
300	20.9	2.8	0.1	25	27.9	2	72	12500	6700
400	23.7	3	0.1	35	31.1	2.1	80	15600	8200

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 3.6/6KV (Um=7.2KV) Galvanized Steel Tape Armoured Cables

N2XSEYBY

NA2XSEYBY

Dimensional Data

Nom. Cross- Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm ²	mm	mm	mm	mm ²	mm	mm	mm	mm	kg / km	kg / km
25	6.05	2.5	0.1	16	12.5	0.5	2.2	39	2800	2300
35	7.1	2.5	0.1	16	13.5	0.5	2.3	42	3200	2600
50	8.25	2.5	0.1	16	14.7	0.5	2.4	45	3800	2900
70	9.9	2.5	0.1	16	16.3	0.5	2.5	49	4700	3400
95	11.7	2.5	0.1	16	18.1	0.5	2.6	53	5800	4000
120	13.1	2.5	0.1	16	19.5	0.5	2.7	56	6800	4600
150	14.3	2.5	0.1	25	20.7	0.5	2.8	59	7900	5100
185	16.3	2.5	0.1	25	22.7	0.8	2.9	64	9400	5900
240	18.7	2.6	0.1	25	25.3	0.8	3.1	70	11700	7000
300	20.9	2.8	0.1	25	27.9	0.8	3.3	76	14100	8300
400	23.7	3	0.1	35	31.1	0.8	3.6	85	18300	10900

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 3.6/6KV (Um=7.2KV) Galvanized Flat Steel wire+Steel Tape

Armoured Cables

N2XSEYFGbY

NA2XSEYFGbY

Dimensional Data

Nom. Cross- Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm ²	mm	mm	mm	mm ²	mm	mm	mm	mm	kg / km	kg / km
25	6.05	2.5	0.1	16	12.5	0.8	2.2	40	2900	2400
35	7.1	2.5	0.1	16	13.7	0.8	2.3	42	3300	2700
50	8.25	2.5	0.1	16	14.7	0.8	2.4	45	3900	3000
70	9.9	2.5	0.1	16	16.3	0.8	2.5	49	4900	3600
95	11.7	2.5	0.1	16	18.1	0.8	2.6	53	6000	4200
120	13.1	2.5	0.1	16	19.5	0.8	2.7	56	7000	4700
150	14.3	2.5	0.1	25	20.7	0.8	2.8	59	8100	5200

185	16.3	2.5	0.1	25	22.7	0.8	2.9	64	9600	6100
240	18.7	2.6	0.1	25	25.3	0.8	3.1	70	11900	7200
300	20.9	2.8	0.1	25	27.9	0.8	3.3	76	14300	8600
400	23.7	3	0.1	35	31.1	0.8	3.6	84	17700	10300

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Electrical data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm ²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
25	727/1200	927/1538	3.6/2.3	272	0.33	2.6	0.4	116	370
35	524/868	668/1113	5.0/3.2	301	0.36	2.6	0.5	108	350
50	387/641	494/822	6.8/4.4	332	0.4	2.6	0.5	102	330
70	268/443	343/568	9.8/6.3	383	0.46	2.6	0.6	97	310
95	193/320	248/410	13.3/8.5	432	0.52	2.6	0.6	92	290
120	153/253	196/325	17.2/11.0	474	0.57	2.6	0.7	89	280
150	124/206	159/265	21.2/13.5	511	0.61	4.3	0.7	87	280
185	99.1/164	128/211	26.6/17.0	562	0.67	4.3	0.8	86	270
240	75.4/125	98/161	34.9/22.3	602	0.72	4.3	0.9	83	260
300	60.1/100	80/130	43.8/28.0	622	0.75	4.3	1	82	260
400	47.0/77.8	64/102	57.3/36.6	648	0.78	5.8	1.1	80	250

Three Core 6/10KV (Um+12KV)

N2XSEY

NA2XSEY

Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
mm ²	mm	mm	mm	mm ²	mm	mm	mm	Cu	Al
								kg / km	kg / km

25	6.05	3.4	0.1	16	14.3	1.6	41	2400	1900
35	7.1	3.4	0.1	16	15.3	1.6	43	2800	2200
50	8.25	3.4	0.1	16	16.5	1.7	46	3400	2500
70	9.9	3.4	0.1	16	18.1	1.7	50	4200	2900
95	11.7	3.4	0.1	16	19.9	1.8	54	5300	3400
120	13.1	3.4	0.1	16	21.3	1.8	57	6200	3900
150	14.3	3.4	0.1	25	22.5	1.9	60	7200	4400
185	16.3	3.4	0.1	25	24.5	1.9	64	8600	5100
240	18.7	3.4	0.1	25	26.9	2	70	10700	6100
300	20.9	3.4	0.1	25	29.1	2.1	75	12900	7100
400	23.7	3.4	0.1	35	31.9	2.2	81	15900	8500

Three Core 6/10KV (Um=12KV) Galvanized Flat Steel wire Armoured Cables

N2XSEYFGbY

NA2XSEYFGbY

Dimensional Data



Nom. Cross- Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm ²	mm	mm	mm	mm ²	mm	mm	mm	mm	kg / km	kg / km
25	6.05	3.4	0.1	16	14.3	0.8	2.3	44	3300	2800
35	7.1	3.4	0.1	16	15.3	0.8	2.4	46	3800	3100
50	8.25	3.4	0.1	16	16.5	0.8	2.5	49	4400	3500
70	9.9	3.4	0.1	16	18.1	0.8	2.6	53	5400	4100
95	11.7	3.4	0.1	16	19.9	0.8	2.8	57	6500	4700
120	13.1	3.4	0.1	16	21.3	0.8	2.9	61	7600	5300
150	14.3	3.4	0.1	25	22.5	0.8	3	64	8700	5900
185	16.3	3.4	0.1	25	24.5	0.8	3.1	68	10200	6800
240	18.7	3.4	0.1	25	26.9	0.8	3.3	74	12500	7900
300	20.9	3.4	0.1	25	29.1	0.8	3.4	79	14900	9100
400	23.7	3.4	0.1	35	31.9	0.8	3.7	86	18000	10600

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Electrical data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Reactance	Inductance
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
25	727/1200	927/1538	3.6/2.3	204	0.43	2.6	0.5	129	405
35	524/868	668/1113	5.0/3.2	237	0.47	2.6	0.6	115	370
50	387/641	494/822	6.8/4.4	260	0.52	2.6	0.6	109	350
70	268/443	343/568	9.8/6.3	298	0.6	2.6	0.7	103	330
95	193/320	248/410	13.3/8.5	334	0.67	2.6	0.7	99	320
120	153/253	196/325	17.2/11.0	365	0.73	2.6	0.8	96	310
150	124/206	159/265	21.2/13.5	392	0.78	4.3	0.8	93	300
185	99.1/164	128/211	26.6/17.0	430	0.86	4.3	0.9	90	290
240	75.4/125	96/161	34.9/22.3	476	0.95	4.3	0.9	87	280
300	60.1/100	80/130	43.8/28.0	524	1.05	4.3	1	85	270
400	47.0/77.8	64/102	57.3/36.6	580	1.16	5.8	1.1	81	260

Three Core 8.7/15KV (Um=17.5KV)

N2XSEY

NA2XSEY

Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								Cu	Al
mm²	mm	mm	mm	mm²	mm	mm	mm	kg / km	kg / km
25	6.05	4.5	0.1	16	16.5	1.7	46	3500	2400
35	7.1	4.5	0.1	16	17.5	1.7	48	3800	2600
50	8.25	4.5	0.1	16	18.7	1.7	51	4400	3000
70	9.9	4.5	0.1	16	20.3	1.8	55	5300	3400
95	11.7	4.5	0.1	16	22.1	1.8	59	6400	4000
120	13.1	4.5	0.1	16	23.5	1.9	62	7400	4500
150	14.3	4.5	0.1	25	24.7	1.9	65	8500	5000
185	16.3	4.5	0.1	25	26.7	2	69	10000	5800

240	18.7	4.5	0.1	25	29.1	2.1	75	12200	6800
300	20.9	4.5	0.1	25	31.3	2.1	80	14400	7900
400	23.7	4.5	0.1	35	34.1	2.2	87	17500	9300

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 8.7/15KV (Um=17.5KV) Galvanized Steel Tape Armoured

Cables

N2XSEYBY

NA2XSEYBY

Dimensional Data

Nom. Cross- Section Area	Approx Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm ²	mm	mm	mm	mm ²	mm	mm	mm	mm	kg / km	kg / km
25	6.05	4.5	0.1	16	16.5	0.5	2.5	49	3800	3300
35	7.1	4.5	0.1	16	17.5	0.5	2.6	51	4300	3600
50	8.25	4.5	0.1	16	18.7	0.5	2.7	54	4900	4000
70	9.9	4.5	0.1	16	20.3	0.5	2.8	58	5900	4600
95	11.7	4.5	0.1	16	22.1	0.5	2.9	62	7100	5300
120	13.1	4.5	0.1	16	23.5	0.5	3	66	8100	5900
150	14.3	4.5	0.1	25	24.7	0.5	3.1	69	9200	6400
185	16.3	4.5	0.1	25	26.7	0.5	3.3	74	10900	7400
240	18.7	4.5	0.1	25	29.1	0.5	3.4	79	13100	8500
300	20.9	4.5	0.1	25	31.3	0.5	3.6	86	16400	10600
400	23.7	4.5	0.1	35	34.1	0.8	3.9	93	19700	12300

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 8.7/15KV (Um=17.5KV) Galvanized Flat Steel Wire Armoured

Cables

N2XSEYFGbY

NA2XSEYFGbY

Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm²	mm	mm	mm	mm²	mm	mm	mm	mm	kg / km	kg / km
25	6.05	4.5	0.1	16	16.5	0.8	2.5	49	3400	3400
35	7.1	4.5	0.1	16	17.5	0.8	2.6	51	4400	3800
50	8.25	4.5	0.1	16	18.7	0.8	2.7	54	5100	4200
70	9.9	4.5	0.1	16	20.3	0.8	2.8	58	6000	4700
95	11.7	4.5	0.1	16	22.1	0.8	2.9	62	7300	5400
120	13.1	4.5	0.1	16	23.5	0.8	3	66	8300	6100
150	14.3	4.5	0.1	25	24.7	0.8	3.1	69	9400	6600
185	16.3	4.5	0.1	25	26.7	0.8	3.3	74	11100	7600
240	18.7	4.5	0.1	25	29.1	0.8	3.4	79	13400	8700
300	20.9	4.5	0.1	25	31.3	0.8	3.6	85	15800	10000
400	23.7	4.5	0.1	35	34.1	0.8	3.9	91	19000	11600

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Electrical data

Nom. Cross-Section Area	DC Resistance	AC Resistance	Short Circuit Rating of Conductor	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen	Short Circuit Rating of Copper Tape Screen	Reactance	Inductance
	CU / AL	CU / AL	CU / AL 1 sec			Per Core 1 sec	Per Core 1 sec		
mm²	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	kA	µΩ/m	nH/m
25	727/1200	927/1538	3.6/2.3	176	0.48	2.6	0.6	132	410
35	524/868	668/1113	5.0/3.2	193	0.53	2.6	0.6	123	390
50	387/641	494/822	6.8/4.4	211	0.58	2.6	0.7	116	370
70	268/443	343/568	9.8/6.3	240	0.65	2.6	0.7	110	350
95	193/320	248/410	13.3/8.5	267	0.73	2.6	0.8	105	330
120	153/253	196/325	17.2/11.0	291	0.79	2.6	0.8	102	320
150	124/206	159/265	21.2/13.5	312	0.85	4.3	0.9	98	310
185	99.1/164	128/211	26.6/17.0	340	0.93	4.3	0.9	95	300
240	75.4/125	98/161	34.9/22.3	375	1.02	4.3	1	91	290
300	60.1/100	80/130	43.8/28.0	411	1.12	4.3	1.1	89	280
400	47.0/77.8	64/102	57.3/36.6	454	1.24	5.8	1.2	84	270

Three Core 12/20KV (Um=24KV)

N2XSEY

NA2XSEY

Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								Cu	Al
mm²	mm	mm	mm	mm²	mm	mm	mm	kg / km	kg / km
35	7.1	5.5	0.1	16	19.7	1.8	53	3800	3100
50	8.25	5.5	0.1	16	20.9	1.8	56	4400	3500
70	9.9	5.5	0.1	16	22.5	1.9	60	5300	4000
95	11.7	5.5	0.1	16	24.3	1.9	64	6400	4600
120	13.1	5.5	0.1	16	25.7	2	67	7400	5200
150	14.3	5.5	0.1	25	26.9	2	70	8500	5700
185	16.3	5.5	0.1	25	28.9	2.1	75	10000	6500
240	18.7	5.5	0.1	25	31.3	2.1	80	12200	7500
300	20.9	5.5	0.1	25	33.5	2.2	85	14400	8700
400	23.7	5.5	0.1	35	36.3	2.3	91	17500	10200

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 12/20KV (Um=24KV) Galvanized Steel Tape Armoured

Cables

N2XSEYBY

NA2XSEYBY

Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm²	mm	mm	mm	mm²	mm	mm	mm	mm	kg / km	kg / km

35	7.1	5.5	0.1	16	19.7	0.5	2.7	57	4900	4200
50	8.25	5.5	0.1	16	20.9	0.5	2.9	60	5600	4700
70	9.9	5.5	0.1	16	22.5	0.5	3	64	6600	5300
95	11.7	5.5	0.1	16	24.3	0.5	3.1	68	7800	6000
120	13.1	5.5	0.1	16	25.7	0.5	3.2	71	8900	6600
150	14.3	5.5	0.1	25	26.9	0.5	3.3	74	10100	7200
185	16.3	5.5	0.1	25	28.9	0.5	3.4	79	11700	8200
240	18.7	5.5	0.1	25	31.3	0.8	3.6	86	14900	10200
300	20.9	5.5	0.1	25	33.5	0.8	3.8	91	17400	11600
400	23.7	5.5	0.1	35	36.3	0.8	4	98	20800	13400

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 12/20KV (Um=24KV) Galvanized Flat Steel Wire Armoured Cables

N2XSEYFGbY

NA2XSEYFGbY

Dimensional Data

TANO
C A B L E

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm ²	mm	mm	mm	mm ²	mm	mm	mm	mm	kg / km	kg / km
35	7.1	5.5	0.1	16	19.7	0.8	2.7	57	5000	4400
50	8.25	5.5	0.1	16	20.9	0.8	2.9	60	5700	4800
70	9.9	5.5	0.1	16	22.5	0.8	3	64	6800	5400
95	11.7	5.5	0.1	16	24.3	0.8	3.1	68	8000	6200
120	13.1	5.5	0.1	16	25.7	0.8	3.2	71	9100	6800
150	14.3	5.5	0.1	25	26.9	0.8	3.3	74	10300	7500
185	16.3	5.5	0.1	25	28.9	0.8	3.4	79	11900	8400
240	18.7	5.5	0.1	25	31.3	0.8	3.6	85	14300	9600
300	20.9	5.5	0.1	25	33.5	0.8	3.8	90	16700	10900
400	23.7	5.5	0.1	35	36.3	0.8	4	97	20100	12700

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Electrical data

Nom. Cross-Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm²	μΩ/m	μΩ/m	kA	μF/m	mA/m	kA	kA	μΩ/m	mH/m
35	524/868	668/1113	5.0/3.2	168	0.67	2.6	0.7	129	410
50	387/641	494/822	6.8/4.4	183	0.73	2.6	0.8	122	390
70	268/443	343/568	9.8/6.3	207	0.83	2.6	0.8	115	370
95	193/320	248/410	13.3/8.5	229	0.92	2.6	0.9	110	350
120	153/253	196/325	17.2/11.0	249	1	2.6	0.9	106	340
150	124/206	159/265	21.2/13.5	266	1.06	4.3	1	103	330
185	99.1/164	128/211	26.6/17.0	289	1.16	4.3	1	100	320
240	75.4/125	98/161	34.9/22.3	318	1.27	4.3	1.1	95	300
300	60.1/100	80/130	43.8/28.0	348	1.39	4.3	1.2	93	300
400	47.0/77.8	64/102	57.3/36.6	388	1.53	5.8	1.3	87	280

Three Core 18/30KV (Um=36KV)

N2XSEY

NA2XSEY

Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								Cu	Al
mm²	mm	mm	mm	mm²	mm	mm	mm	kg / km	kg / km
50	8.25	8	0.1	16	25.9	2	68	5800	4900
70	9.9	8	0.1	16	27.5	2	71	6800	5500
95	11.7	8	0.1	16	29.3	2.1	75	8000	6100
120	13.1	8	0.1	16	30.7	2.1	79	9000	6700
150	14.3	8	0.1	25	31.9	2.2	81	10100	7300
185	16.3	8	0.1	25	33.9	2.2	86	11800	8300
240	18.7	8	0.1	25	36.3	2.3	91	14000	9400
300	20.9	8	0.1	25	38.5	2.4	97	16500	10700
400	23.7	8	0.1	35	41.3	2.5	103	19700	12300

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 18/30KV (Um=36KV) Galvanized Steel Tape Armoured cables

N2XSEYBY

NA2XSEYBY

Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm ²	mm	mm	mm	mm ²	mm	mm	mm	mm	kg / km	kg / km
50	8.25	8	0.1	16	25.9	0.5	3.2	72	7300	6400
70	9.9	8	0.1	16	27.5	0.5	3.3	75	8400	7100
95	11.7	8	0.1	16	29.3	0.5	3.5	80	9700	7900
120	13.1	8	0.1	16	30.7	0.8	3.6	84	11700	9400
150	14.3	8	0.1	25	31.9	0.8	3.7	87	12900	10100
185	16.3	8	0.1	25	33.9	0.8	3.9	92	14800	11300
240	18.7	8	0.1	25	36.3	0.8	4	98	17300	12600
300	20.9	8	0.1	25	38.5	0.8	4.2	103	20000	14100
400	23.7	8	0.1	35	41.3	0.8	4.4	110	23500	16000

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Three Core 18/30KV (Um=36KV) Galvanized Flat Steel wire Armoured Cables

N2XSEYFGbY

NA2XSEYFGbY

Dimensional Data

Nom. Cross- Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
									Cu	Al
mm ²	mm	mm	mm	mm ²	mm	mm	mm	mm	kg / km	kg / km
50	8.25	8	0.1	16	25.9	0.8	3.2	72	7500	6600
70	9.9	8	0.1	16	27.5	0.8	3.3	76	8600	7300
95	11.7	8	0.1	16	29.3	0.8	3.5	80	10000	8100
120	13.1	8	0.1	16	30.7	0.8	3.6	83	11200	8900
150	14.3	8	0.1	25	31.9	0.8	3.7	86	12400	9500
185	16.3	8	0.1	25	33.9	0.8	3.9	91	14100	10600
240	18.7	8	0.1	25	36.3	0.8	4	97	16600	11900
300	20.9	8	0.1	25	38.5	0.8	4.2	102	19200	13400
400	23.7	8	0.1	35	41.3	0.8	4.4	109	22700	15300

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard

Electrical data

Nom. Cross- Section Area	DC Resistance CU / AL	AC Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm ²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
50	387/641	494/822	6.8/4.4	142	0.85	2.6	1	134	430
70	268/443	343/568	9.8/6.3	159	0.95	2.6	1	127	400
95	193/320	248/410	13.3/8.5	175	1.05	2.6	1.1	121	390
120	153/253	196/325	17.2/11.0	189	1.13	2.6	1.1	117	370
150	124/206	159/265	21.2/13.5	201	1.21	4.3	1.2	113	360
185	99.1/164	128/211	26.6/17.0	217	1.3	4.3	1.2	109	350
240	75.4/125	98/161	34.9/22.3	237	1.42	4.3	1.3	104	330
300	60.1/100	80/130	43.8/28.0	258	1.55	4.3	1.4	101	320
400	47.0/77.8	64/102	57.3/36.6	282	1.69	5.8	1.5	96	290

Current Rating for Three Core 1.8/3KV(Um=7.2KV) to 26/35KV(Um=42KV)

XLPE Insulation

Nom. Cross- Section Area mm²	Unarmored						Armored					
	Buried direct in Ground		Laid in Single Way Duct		Laid in Air		Buried direct in Ground		Laid in Single Way Duct		Laid in Air	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
A	A		A		A		A		A		A	
10	76	53	62	42	87	62	76	53	63	43	88	63
16	101	78	87	67	109	84	101	78	88	68	110	85
25	129	100	112	87	142	110	129	100	112	87	143	111
35	153	119	133	103	170	132	154	119	134	104	172	133
50	181	140	158	122	204	158	181	140	158	123	205	159
70	221	171	193	150	253	196	220	171	194	150	253	196
95	262	203	231	179	304	236	263	204	232	180	307	238
120	298	232	264	205	351	273	298	232	264	206	352	274
150	334	260	297	231	398	309	332	259	296	231	397	309
185	377	294	336	262	455	355	374	293	335	262	453	354
240	434	340	390	305	531	415	431	338	387	304	529	415
300	489	384	441	346	606	475	482	380	435	343	599	472
400	553	438	501	398	696	552	541	432	492	393	683	545
500	613	498	541	451	786	652	601	492	532	446	773	645
630	663	568	591	501	896	762	651	562	582	496	883	755

TANO
C A B L E



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