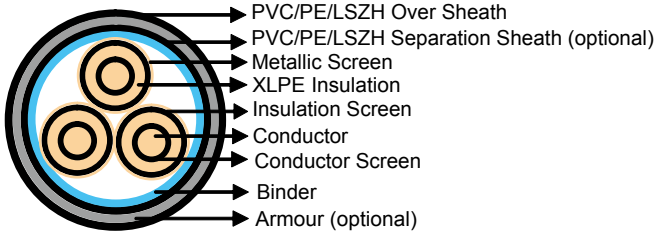
Three Core Cables to VDE 0276

APPLICATIONS:

The three core cables are designed for distribution of electrical power with nominal voltage Uo/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 aluminium 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, handing, 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 2XI1 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=7.2)KV	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	8.0
70	2.5	3.4	4.5	5.5	8.0
95	2.5	3.4	4.5	5.5	8.0
120	2.5	3.4	4.5	5.5	8.0
150	2.5	3.4	4.5	5.5	8.0
185	2.5	3.4	4.5	5.5	8.0
240	2.6	3.4	4.5	5.5	8.0
300	2.8	3.4	4.5	5.5	8.0
400	3.0	3.4	4.5	5.5	8.0

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
mm²	mm²	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 armoured cable): The separation sheath comprises a layer of extruded PVC, PE or LSZH, applied under the armour. Thickness of separation sheath is shown in table 3.

Table 3. Separation Sheath Thickness

Cores Diameter		Approx.Thickess of Inner Sheath
mm		mm
>	<	
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2.0

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.

Tabel 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.

Over 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. LSZH can be offered as an option. Normal wall thickness is 2.5mm (for 1/500mmsq 18/30KV, wall thickness is 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 or LZSH 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

Nominal Voltage Uo/U	Operating Voltage (Um)	Testing Voltage
18/30KV	36KV	63KV

TYPE CODES:

Conductor

N According to VDE Standard (No abbreviation for copper conductor)
A Aluminium 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(strip)
Gb Counter Helix of galvanized steel tape
B Steel tape armouring
R Armour of galvanized round steel wire
Ra Armour of round aluminium wire

Sheath

2Y PE
Y PVC
H LSZH
K Lead sheath
KL Aluminium sheath

Three Core 3.6/6KV (Um=7.2KV)
N2XSEY
NA2XSEY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
25	6.05	2.5	16	12.5	1.5	33.2	2100	1600
35	7.10	2.5	16	13.5	1.6	35.9	2500	1800
50	8.25	2.5	16	14.7	1.6	38.7	3000	2100
70	9.90	2.5	16	16.3	1.7	42.8	3800	2500
95	11.7	2.5	16	18.1	1.7	46.9	4800	3000
120	13.1	2.5	16	19.5	1.8	51.4	5800	3500
150	14.3	2.5	25	20.7	1.8	54.7	6700	3900
185	16.3	2.5	25	22.7	1.9	59.0	8100	4600
240	18.7	2.6	25	25.3	1.9	65.9	10200	5600
300	20.9	2.8	25	27.9	2.0	72.2	12500	6700
400	23.7	3.0	35	31.1	2.1	79.7	15600	8200

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	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
25	6.05	2.5	16	12.5	0.5	2.2	35.6	2800	2300
35	7.10	2.5	16	13.5	0.5	2.3	38.3	3200	2600
50	8.25	2.5	16	14.7	0.5	2.4	41.3	3800	2900
70	9.90	2.5	16	16.3	0.5	2.5	45.4	4700	3400
95	11.7	2.5	16	18.1	0.5	2.6	49.7	5800	4000
120	13.1	2.5	16	19.5	0.5	2.7	54.2	6800	4600
150	14.3	2.5	25	20.7	0.5	2.8	57.8	7900	5100
185	16.3	2.5	25	22.7	0.8	2.9	62.6	9400	5900
240	18.7	2.6	25	25.3	0.8	3.1	69.9	11700	7000
300	20.9	2.8	25	27.9	0.8	3.3	76.4	14100	8300
400	23.7	3.0	35	31.1	0.8	3.6	84.3	18300	10900

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	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
25	6.05	2.5	16	12.5	0.8	2.2	36.2	2900	2400
35	7.10	2.5	16	13.7	0.8	2.3	38.9	3300	2700
50	8.25	2.5	16	14.7	0.8	2.4	41.9	3900	3000
70	9.90	2.5	16	16.3	0.8	2.5	46.0	4900	3600
95	11.7	2.5	16	18.1	0.8	2.6	50.3	6000	4200
120	13.1	2.5	16	19.5	0.8	2.7	54.8	7000	4700
150	14.3	2.5	25	20.7	0.8	2.8	58.4	8100	5200
185	16.3	2.5	25	22.7	0.8	2.9	62.6	9600	6100
240	18.7	2.6	25	25.3	0.8	3.1	69.9	11900	7200
300	20.9	2.8	25	27.9	0.8	3.3	76.4	14300	8600
400	23.7	3.0	35	31.1	0.8	3.6	84.3	17700	10300

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Metallic Screen Per Core 1 sec	Reactance	Inductance
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	μΩ/m	nH/m
25	727/1200	927/1538	3.6/2.3	272	0.33	2.6	116	370
35	524/868	668/1113	5.0/3.2	301	0.36	2.6	108	350
50	387/641	494/822	6.8/4.4	332	0.40	2.6	102	330
70	268/443	343/568	9.8/6.3	383	0.46	2.6	97	310
95	193/320	248/410	13.3/8.5	432	0.52	2.6	92	290
120	153/253	196/325	17.2/11.0	474	0.57	2.6	89	280
150	124/206	159/265	21.2/13.5	511	0.61	4.3	87	280
185	99/164	128/211	26.6/17.0	562	0.67	4.3	86	270
240	75/125	98/161	34.9/22.3	602	0.72	4.3	83	260
300	60/100	80/130	43.8/28.0	622	0.75	4.3	82	260
400	47/78	64/102	57.3/36.6	648	0.78	5.8	80	250

Three Core 6/10KV (Um=12KV)
N2XSEY
NA2XSEY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
25	6.05	3.4	16	14.3	1.6	37.3	2400	1900

Caledonian Medium Voltage Cables

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
35	7.10	3.4	16	15.3	1.6	39.7	2800	2200
50	8.25	3.4	16	16.5	1.7	42.8	3400	2500
70	9.90	3.4	16	18.1	1.7	46.7	4200	2900
95	11.7	3.4	16	19.9	1.8	51.0	5300	3400
120	13.1	3.4	16	21.3	1.8	55.3	6200	3900
150	14.3	3.4	25	22.5	1.9	58.8	7200	4400
185	16.3	3.4	25	24.5	1.9	62.9	8600	5100
240	18.7	3.4	25	26.9	2.0	69.6	10700	6100
300	20.9	3.4	25	29.1	2.1	75.0	12900	7100
400	23.7	3.4	35	31.9	2.2	81.6	15900	8500

Three Core 6/10KV (Um=12KV) Galvanized Steel Tape Armoured Cables
N2XSEYBY
NA2XSEYBY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
25	6.05	3.4	16	14.3	0.5	2.3	39.7	3200	2700
35	7.10	3.4	16	15.3	0.5	2.4	42.3	3700	3000
50	8.25	3.4	16	16.5	0.5	2.5	45.4	4300	3400
70	9.90	3.4	16	18.1	0.5	2.6	49.5	5200	3900
95	11.7	3.4	16	19.9	0.5	2.8	54.0	6400	4600
120	13.1	3.4	16	21.3	0.5	2.9	58.5	7400	5200
150	14.3	3.4	25	22.5	0.5	3.0	62.0	8500	5700
185	16.3	3.4	25	24.5	0.5	3.1	66.9	10000	6500
240	18.7	3.4	25	26.9	0.5	3.3	73.8	12300	7600
300	20.9	3.4	25	29.1	0.5	3.4	79.2	14600	8800
400	23.7	3.4	35	31.9	0.8	3.7	86.2	18700	11300

Three Core 6/10KV (Um=12KV) Galvanized Flat Steel Wire+Steel Tape Armoured Cables
N2XSEYFGbY
NA2XSEYFGbY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
25	6.05	3.4	16	14.3	0.8	2.3	40.3	3300	2800
35	7.10	3.4	16	15.3	0.8	2.4	42.9	3800	3100

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
50	8.25	3.4	16	16.5	0.8	2.5	46.0	4400	3500
70	9.90	3.4	16	18.1	0.8	2.6	50.1	5400	4100
95	11.7	3.4	16	19.9	0.8	2.8	54.6	6500	4700
120	13.1	3.4	16	21.3	0.8	2.9	59.1	7600	5300
150	14.3	3.4	25	22.5	0.8	3.0	62.6	8700	5900
185	16.3	3.4	25	24.5	0.8	3.1	67.5	10200	6800
240	18.7	3.4	25	26.9	0.8	3.3	74.4	12500	7900
300	20.9	3.4	25	29.1	0.8	3.4	79.8	14900	9100
400	23.7	3.4	35	31.9	0.8	3.7	86.8	18000	10600

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Metallic Screen Per Core 1 sec	Reactance	Inductance
mm²	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	μΩ/m	nH/m
25	727/1200	927/1538	3.6/2.3	204	0.43	2.6	129	405
35	524/868	668/1113	5.0/3.2	237	0.47	2.6	115	370
50	387/641	494/822	6.8/4.4	260	0.52	2.6	109	350
70	268/443	343/568	9.8/6.3	298	0.60	2.6	103	330
95	193/320	248/410	13.3/8.5	334	0.67	2.6	99	320
120	153/253	196/325	17.2/11.0	365	0.73	2.6	96	310
150	124/206	159/265	21.2/13.5	392	0.78	4.3	93	300
185	99.1/164	128/211	26.6/17.0	430	0.86	4.3	90	290
240	75.4/125	98/161	34.9/22.3	476	0.95	4.3	87	280
300	60.1/100	80/130	43.8/28.0	524	1.05	4.3	85	270
400	47.0/77.8	64/102	57.3/36.6	580	1.16	5.8	81	260

Three Core 8.7/15KV (Um=17.5KV)
N2XSEY
NA2XSEY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
25	6.05	4.5	16	16.5	1.7	42.2	3500	2400
35	7.10	4.5	16	17.5	1.7	44.7	3800	2600
50	8.25	4.5	16	18.7	1.7	47.6	4400	3000
70	9.90	4.5	16	20.3	1.8	51.6	5300	3400
95	11.7	4.5	16	22.1	1.8	55.7	6400	4000
120	13.1	4.5	16	23.5	1.9	60.3	7400	4500

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
150	14.3	4.5	25	24.7	1.9	63.6	8500	5000
185	16.3	4.5	25	26.7	2.0	67.8	10000	5800
240	18.7	4.5	25	29.1	2.1	74.5	12200	6800
300	20.9	4.5	25	31.3	2.1	79.8	14400	7900
400	23.7	4.5	35	34.1	2.2	86.4	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	Metallic Screen Area	Approx Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
25	6.05	4.5	16	16.5	0.5	2.5	44.8	3800	3300
35	7.10	4.5	16	17.5	0.5	2.6	47.5	4300	3600
50	8.25	4.5	16	18.7	0.5	2.7	50.6	4900	4000
70	9.90	4.5	16	20.3	0.5	2.8	54.6	5900	4600
95	11.7	4.5	16	22.1	0.5	2.9	58.9	7100	5300
120	13.1	4.5	16	23.5	0.5	3.0	63.5	8100	5900
150	14.3	4.5	25	24.7	0.5	3.1	67.0	9200	6400
185	16.3	4.5	25	26.7	0.5	3.3	72.0	10900	7400
240	18.7	4.5	25	29.1	0.5	3.4	78.7	13100	8500
300	20.9	4.5	25	31.3	0.5	3.6	84.4	16400	10600
400	23.7	4.5	35	34.1	0.8	3.9	91.4	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+Steel Tape Armoured Cables
N2XSEYFGbY
NA2XSEYFGbY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
25	6.05	4.5	16	16.5	0.8	2.5	44.8	3400	3400
35	7.10	4.5	16	17.5	0.8	2.6	47.5	4400	3800
50	8.25	4.5	16	18.7	0.8	2.7	50.6	5100	4200
70	9.90	4.5	16	20.3	0.8	2.8	54.6	6000	4700

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
95	11.7	4.5	16	22.1	0.8	2.9	58.9	7300	5400
120	13.1	4.5	16	23.5	0.8	3.0	63.5	8300	6100
150	14.3	4.5	25	24.7	0.8	3.1	67.0	9400	6600
185	16.3	4.5	25	26.7	0.8	3.3	72.0	11100	7600
240	18.7	4.5	25	29.1	0.8	3.4	78.7	13400	8700
300	20.9	4.5	25	31.3	0.8	3.6	84.4	15800	10000
400	23.7	4.5	35	34.1	0.8	3.9	91.4	19000	11600

Electrical Data

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

Three Core 12/20KV (Um=24KV)
N2XSEY
NA2XSEY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
35	7.10	5.5	16	19.7	1.8	49.2	3800	3100
50	8.25	5.5	16	20.9	1.8	52.1	4400	3500
70	9.90	5.5	16	22.5	1.9	56.1	5300	4000
95	11.7	5.5	16	24.3	1.9	60.2	6400	4600
120	13.1	5.5	16	25.7	2.0	64.8	7400	5200
150	14.3	5.5	25	26.9	2.0	68.1	8500	5700
185	16.3	5.5	25	28.9	2.1	72.4	10000	6500
240	18.7	5.5	25	31.3	2.1	78.8	12200	7500

Caledonian Medium Voltage Cables

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
300	20.9	5.5	25	33.5	2.2	84.3	14400	8700
400	23.7	5.5	35	36.3	2.3	90.9	17500	10200

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	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
35	7.10	5.5	16	19.7	0.5	2.7	52.0	4900	4200
50	8.25	5.5	16	20.9	0.5	2.9	55.3	5600	4700
70	9.90	5.5	16	22.5	0.5	3.0	59.3	6600	5300
95	11.7	5.5	16	24.3	0.5	3.1	63.6	7800	6000
120	13.1	5.5	16	25.7	0.5	3.2	68.2	8900	6600
150	14.3	5.5	25	26.9	0.5	3.3	71.7	10100	7200
185	16.3	5.5	25	28.9	0.5	3.4	76.0	11700	8200
240	18.7	5.5	25	31.3	0.8	3.6	83.4	14900	10200
300	20.9	5.5	25	33.5	0.8	3.8	89.1	17400	11600
400	23.7	5.5	35	36.3	0.8	4.0	94.7	20800	13400

Three Core 12/20KV (Um=24KV) Galvanized Flat Steel Wire+Steel Tape Armoured Cables
N2XSEYFGbY
NA2XSEYFGbY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
35	7.10	5.5	16	19.7	0.8	2.7	52.6	5000	4400
50	8.25	5.5	16	20.9	0.8	2.9	55.9	5700	4800
70	9.90	5.5	16	22.5	0.8	3.0	59.9	6800	5400
95	11.7	5.5	16	24.3	0.8	3.1	64.2	8000	6200
120	13.1	5.5	16	25.7	0.8	3.2	68.8	9100	6800
150	14.3	5.5	25	26.9	0.8	3.3	72.3	10300	7500
185	16.3	5.5	25	28.9	0.8	3.4	76.6	11900	8400
240	18.7	5.5	25	31.3	0.8	3.6	83.4	14300	9600
300	20.9	5.5	25	33.5	0.8	3.8	89.1	16700	10900
400	23.7	5.5	35	36.3	0.8	4.0	94.7	20100	12700

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Metallic Screen Per Core 1 sec	Reactance	Inductance
mm²	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	µΩ/m	nH/m
35	524/868	668/1113	5.0/3.2	168	0.67	2.6	129	410
50	387/641	494/822	6.8/4.4	183	0.73	2.6	122	390
70	268/443	343/568	9.8/6.3	207	0.83	2.6	115	370
95	193/320	248/410	13.3/8.5	229	0.92	2.6	110	350
120	153/253	196/325	17.2/11.0	249	1.00	2.6	106	340
150	124/206	159/265	21.2/13.5	266	1.06	4.3	103	330
185	99/164	128/211	26.6/17.0	289	1.16	4.3	100	320
240	75/125	98/161	34.9/22.3	318	1.27	4.3	95	300
300	60/100	80/130	43.8/28.0	348	1.39	4.3	93	300
400	47/78	64/102	57.3/36.6	388	1.53	5.8	87	280

Caledonian Medium Voltage Cables

Three Core 18/30KV (Um=36KV)
N2XSEY
NA2XSEY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
							CU	AL
mm²	mm	mm	mm²	mm	mm	mm	kg/km	kg/km
50	8.25	8.0	16	25.9	2.0	63.2	5800	4900
70	9.90	8.0	16	27.5	2.0	67.1	6800	5500
95	11.7	8.0	16	29.3	2.1	71.4	8000	6100
120	13.1	8.0	16	30.7	2.1	75.7	9000	6700
150	14.3	8.0	25	31.9	2.2	79.3	10100	7300
185	16.3	8.0	25	33.9	2.2	83.3	11800	8300
240	18.7	8.0	25	36.3	2.3	90.0	14000	9400
300	20.9	8.0	25	38.5	2.4	95.4	16500	10700
400	23.7	8.0	35	41.3	2.5	102.0	19700	12300

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	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
50	8.25	8.0	16	25.9	0.5	3.2	66.6	7300	6400
70	9.90	8.0	16	27.5	0.5	3.3	70.7	8400	7100
95	11.7	8.0	16	29.3	0.5	3.5	75.2	9700	7900
120	13.1	8.0	16	30.7	0.8	3.6	80.3	11700	9400
150	14.3	8.0	25	31.9	0.8	3.7	83.9	12900	10100
185	16.3	8.0	25	33.9	0.8	3.9	88.3	14800	11300
240	18.7	8.0	25	36.3	0.8	4.0	95.0	17300	12600
300	20.9	8.0	25	38.5	0.8	4.2	100.6	20000	14100
400	23.7	8.0	35	41.3	0.8	4.4	107.4	23500	16000

Three Core 18/30KV (Um=36KV) Galvanized Flat Steel Wire+Steel Tape Armoured Cables
N2XSEYFGbY
NA2XSEYFGbY
Dimensional Data

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
50	8.25	8.0	16	25.9	0.8	3.2	67.2	7500	6600

Nom. Cross-Section Area	Approx. Conductor Diameter	Nom. Insulation Thickness	Metallic Screen Area	Approx. Insulation Diameter	Nom. Armour Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
								CU	AL
mm²	mm	mm	mm²	mm	mm	mm	mm	kg/km	kg/km
70	9.90	8.0	16	27.5	0.8	3.3	71.3	8600	7300
95	11.7	8.0	16	29.3	0.8	3.5	75.8	10000	8100
120	13.1	8.0	16	30.7	0.8	3.6	80.9	11200	8900
150	14.3	8.0	25	31.9	0.8	3.7	84.5	12400	9500
185	16.3	8.0	25	33.9	0.8	3.9	88.9	14100	10600
240	18.7	8.0	25	36.3	0.8	4.0	95.6	16600	11900
300	20.9	8.0	25	38.5	0.8	4.2	101.2	19200	13400
400	23.7	8.0	35	41.3	0.8	4.4	108.0	22700	15300

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Metallic Per Core 1 sec	Reactance	Inductance
mm²	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	µΩ/m	nH/m
50	387/641	494/822	6.8/4.4	142	0.85	2.6	134	430
70	268/443	343/568	9.8/6.3	159	0.95	2.6	127	400
95	193/320	248/410	13.3/8.5	175	1.05	2.6	121	390
120	153/253	196/325	17.2/11.0	189	1.13	2.6	117	370
150	124/206	159/265	21.2/13.5	201	1.21	4.3	113	360
185	99/164	128/211	26.6/17.0	217	1.3	4.3	109	350
240	75/125	98/161	34.9/22.3	237	1.42	4.3	104	330
300	60/100	80/130	43.8/28.0	258	1.55	4.3	101	320
400	47/78	64/102	57.3/36.6	282	1.69	5.8	96	290

Caledonian Medium Voltage Cables

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

Nom. Cross-Section Area	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
mm²	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