



# METAL CABLE

MEDIUM & HIGH VOLTAGE CABLES



WWW . metalcableco. COM  
D/SA/O3. Rev : 02. Date: May 2022



METAL CABLE Co.



In the name of God



METAL CABLE Co.

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## About Us


Metal Cable Company, in order to achieve the industrial self-sufficiency of the country in 1370, was established by the private sector with the construction of a factory in Kaveh Industrial City (Saveh), and with the installation and commissioning of machines and specialized laboratory equipment in the field of wire and cable production in category low voltage power (Copper and Aluminum), Instrument and self-supporting cables to meet the needs of domestic and foreign markets with the efforts of experienced and efficient engineers in the technical and engineering sectors, quality control and production has begun its activities. By performing several steps of development plan and installation of modern machines and quantitative and qualitative changes in production lines, the company in 1387 succeeded in launching a production line of Fire resistance cables, in 1390 succeeded in launching production lines of medium and high voltage cables Up to 63 KV and lead sheathed cables.

The raw materials used by the factory are supplied from the best domestic and foreign Supplier and their quality is measured by the quality control unit using the best testing equipment. Although, control of Semi-made products and final test of all products are done according the national and international standards such as INSO, IEC, BS, EN, ASTM, VDE, IPS by Establishment quality control an equipped laboratory. It should be noted that the design and engineering unit of the company is responsible for designing orders in accordance with national and international standards at the request of customers.

This company has Faraday, Fire and Low Voltage (LV) laboratories to test all types of power cables, medium and low Voltage, instrument, control, fire resistant, halogen free, silicone, etc. Metal Cable Laboratory is proud to cooperate with other related industries in conducting tests and issuing test certificates with the approval of the National Standards Organization as an Accredited Laboratory.



# Certificates




## CERTIFICATE



**Management system as per ISO 9001: 2015**

In accordance with procedures of TÜV NORD Iran, it is hereby certified that



**METAL CABLE Co.**  
 Head Office: No.41, Hosseini Rad Alley, Motahari St., Vali-Asr Ave., Tehran, Iran  
 Factory: 16<sup>th</sup> St., Kaveh Industrial City, Saveh, Iran  
 applies a management system in line with the above standard for the following scope

**Design and Production of Different Types of Low Voltage (Control & Instrument) and Medium Voltage Cables & Wires and Lead Sheath Cables**


Certificate Registration No. TA-01 109 20288

Valid until 2022-06-30  
Initial certification: 2013-07-05



Certification Body at TÜV NORD Iran (TÜV AUSTRIA Partner in Iran)      Tehran, 2020-07-04

This certification was conducted in accordance with the auditing and certification procedures of TÜV NORD Iran and is subject to regular surveillance audits.  
 TÜV NORD Iran (TÜV AUSTRIA Partner in Iran)  
 Apt. 4, 9<sup>th</sup> Floor, Fircoosh Building, No. 22, Fircoosh St., North Shahrivar St., 156311340 - Tehran, Iran




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## CERTIFICATE



**Management system as per ISO/TS 29001:2010**

In accordance with TÜV AUSTRIA CERT procedures, it is hereby certified that



**METAL CABLE Co.**  
 Head Office: No.41, Hosseini Rad Alley, Motahari St., Vali-Asr Ave., Tehran, Iran  
 Factory: 16<sup>th</sup> St., Kaveh Industrial City, Saveh, Iran  
 applies a management system in line with the above standard for the following scope

**Design and Production of Different Types of Low Voltage(Control & Instrument) and Medium Voltage Cables & Wires and Lead Sheath Cables, Used in Oil, Gas and Petrochemical Industries**

Certificate Registration No. TA290203006429

Valid until 2022-06-30  
Initial certification: 2016-12-14



Certification Body at TÜV AUSTRIA CERT GMBH      Vienna, 2020-07-04

This certification was conducted in accordance with TÜV AUSTRIA CERT auditing and certification procedures and is subject to regular surveillance audits.  
 TÜV AUSTRIA CERT GMBH · Deutschentradle 19 · A-1230 Wien · www.tuv.at

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# CERTIFICATE



Management system as per  
ISO 14001: 2015

In accordance with procedures of TÜV NORD Iran, it is hereby certified that



**METAL CABLE Co.**

Head Office: No.41, Hosselini Rad Alley, Motahari St., Vah-Asr Ave.,  
Tehran, Iran  
Factory: 16<sup>th</sup> St., Kaveh Industrial City, Saveh, Iran

applies a management system in line with the above standard for the following scope

**Design and Production of Different Types of Low Voltage (Control & Instrument) and Medium Voltage Cables & Wires and Lead Sheath Cables**

Certificate Registration No. TA-IR 194 26/97

Valid until 2022-06-30  
Initial certification 2013-07-05

*S. Khavari*

Certification Body at TÜV NORD Iran  
(TÜV AUSTRIA Partner in Iran)

Tehran, 2020-07-04

This certification was conducted in accordance with the auditing and certification procedures of TÜV NORD Iran and is subject to regular surveillance audits.

TÜV NORD Iran (TÜV AUSTRIA Partner in Iran)  
Apt. 4, 5<sup>th</sup> Floor, Ferozesh Building, No. 22, Ferozesh St., North Sadravard St., 1502813246 - Tehran, Iran



TÜV AUSTRIA CERT GMBH, Deutschstraße 10, A-1230 Wien, Austria

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# CERTIFICATE



Management system as per  
ISO 45001:2018

In accordance with TÜV AUSTRIA CERT procedures, it is hereby certified that



**METAL CABLE Co.**

Head Office: No.28, Hosselini Rad Alley, Motahari St., Vah-Asr Ave.,  
Tehran, Iran  
Factory: 16<sup>th</sup> St., Kaveh Industrial City, Saveh, Iran

applies a management system in line with the above standard for the following scope

**Design & Production of Different Types of Low Voltage (Control & Instrument) and Medium Voltage Cables & Wires and Lead Sheath Cables**

Certificate Registration No. 20116263009773

Valid until 2022-06-30  
Initial certification: 2013-07-05

*Noraf*

Certification Body  
at TÜV AUSTRIA CERT GMBH

Vienna, 2020-11-24

This certification was conducted in accordance with TÜV AUSTRIA CERT auditing and certification procedures and is subject to regular surveillance audits.  
TÜV AUSTRIA CERT GMBH, Deutschstraße 10, A-1230 Wien, www.tuv.at



TÜV AUSTRIA CERT GMBH, Deutschstraße 10, A-1230 Wien, Austria



# Certificates

DNV·GL

## KEMA TEST REPORT

1186-18

<b>Object</b>	Single-core power cable
<b>Type</b>	U <sub>0</sub> = 12 kV 1x240 mm <sup>2</sup> XLPE CABLE  12/20 (24) kV - 1x240 mm <sup>2</sup> - Cu - XLPE - LSHOF
<b>Client</b>	Metal Cable Co., No. 41, Hosseini Rad Alley, Motahari Coner, Valiasr Ave. 1595814613 Tehran, Iran
<b>Manufacturer</b>	Metal Cable Co., No. 41, Hosseini Rad Alley, Motahari Coner, Valiasr Ave. 1595814613 Tehran, Iran *)
<b>Tested by</b>	DNV GL Netherlands B.V., Arnhem, the Netherlands
<b>Date of tests</b>	13 March to 26 May 2018
<b>Test specification</b>	The tests have been carried out in accordance with client's instructions. Test procedure and test parameters were based on IEC 60502-1:2004+AMD1:2009 and IEC 60502-2:2014.
<b>Summary and conclusion</b>	See chapter 1 for test specifications and results.

This report applies only to the object tested. The responsibility for conformity of any object having the same type references as that tested rests with the Manufacturer.  
\*) as declared by the client

This report consists of 42 pages in total.

DNV GL Netherlands B.V.

*J.P. Pontelijn*  
J.P. Pontelijn  
Executive Vice President  
KEMA Laboratories



KEMA Laboratories

Arnhem, 27 August 2018





### گواهینامه تایید صلاحیت آزمایشگاه Laboratory Accreditation Certificate

The National Accreditation Center of Iran (NACI)  
herewith confirms that :

مرکز ملی تایید صلاحیت ایران بدین وسیله تایید می نماید که :

#### Metal Cable Laboratory

#### آزمایشگاه کابل منال

Address: NO.28 , 16 Ave., Kaveh Industrial City, Saveh,  
I.R.IRAN  
Tel: +98(86) 42343797-9  
Fax : +98(86) 42345606  
Web Site : [www.Metalcableco.Com](http://www.Metalcableco.Com)

نشانی: ساوه . شهر صنعتی کاوه . خیابان ۱۶ . پلاک ۲۸  
تلفن : ۹۱ - ۴۲۳۴۳۷۹۷ - ۰۸۶ . ۵ - ۴۲۳۴۵۶۰۲ - ۰۸۶  
دورنگار : ۰۸۶ - ۴۲۳۴۵۶۰۶  
سایت اینترنتی : [www.Metalcableco.Com](http://www.Metalcableco.Com)

Has fulfilled the ISIRI-ISO/IEC 17025.  
And is competent to carry out ■ Test □ Calibration  
services according to accreditation scope are listed in  
1page/s of annex.

الزامات استاندارد ایران - ایزو/آی ای سی ۱۷۰۲۵ را رعایت نموده است.  
و صلاحیت انجام خدمات آزمون ■ کالیبراسیون □ مطابق دامنه کاربردی  
که جزئیات آن در برگ پیوست آمده است را داراست

NACI Registration No: NACI/Lab/669  
Initial Accreditation Date and Place: 2015.04.18-Tehran  
Renewal Date : 2019.05.04  
Expiry Date : 2022.05.03


شماره گواهینامه تایید صلاحیت: NACI/Lab/669  
تاریخ و محل صدور اولیه گواهینامه : ۱۳۹۴/۰۴/۱۸ - تهران  
تاریخ صدور مجدد گواهینامه : ۱۳۹۸/۰۵/۰۴  
تاریخ خاتمه اعتبار گواهینامه : ۱۴۰۱/۰۵/۰۳

Validity of Accreditation Certificate depends on  
continuity of compliance with the relevant requirements  
and obtaining the approval based on the annual  
surveillance assessment.

حفظ اعتبار در طول دوره منوط به استمرار انطباق با ضوابط مربوطه و اخذ  
تاییده در ارزیابی های مراقبتی سالانه است.

  
N. Pirouzbakht  
PRESIDENT, IRAN ACCREDITATION COUNCIL

  
نیره پیروزبخت  
رئیس شورای تایید صلاحیت ایران

A.R. Khakifirooz  
NACI PRESIDENT  


علیرضا خاکی فیروز  
رئیس مرکز ملی تایید صلاحیت ایران  


# Certificates



## گواهینامه تأیید صلاحیت آزمایشگاه Laboratory Accreditation Certificate

### Annex Accreditation Scope of Metal Cable Laboratory

No.	Product Name	Product oriented <sup>1</sup>	Test oriented <sup>2</sup>	Test title	Applicable Range	Reference
1	Non-Sheathed Cables for Fixed wiring	✓		Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V- Part 3	---	ISIRI 607-3
2	Sheathed Cables for Fixed wiring	✓		Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V- Part 4	---	ISIRI 607-4
3	Flexible Cables (cords)	✓		Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V- Part 5	---	INSO 607-5
4	Power cables With extruded insulation		✓	Power cables with extruded insulation and their accessories for rated voltage from 1kv(Um = 1.2kV ) Up to 30kV( 36kV)- part1. except hardness test, Ozone resistance, Fluorine content test, soot content test	---	INSO 3569-1

1- **Product Oriented:** Laboratory is accredited to meet all requirements of the product specification standard.  
2- **Test Oriented:** Laboratory is accredited for carrying out the tests mentioned in the above table.

A.R. Khakifirooz  
NACI PRESIDENT

*Khakifirooz*

Page 2 of 2

*N. Piroozbakht*  
PRESIDENT, IRAN ACCREDITATION COUNCIL

# Certificates



## گواهینامه تأیید صلاحیت آزمایشگاه Laboratory Accreditation Certificate

### پیوست

### دامنه کاربرد تأیید صلاحیت آزمایشگاه کابل متال

ردیف	نام محصول	محصول محور <sup>۱</sup>	آزمون محور <sup>۲</sup>	عنوان آزمون	محدوده کاربرد	مرجع
۱	سیم ها برای سیم کشی نصب ثابت	✓		سیم و کابل با عایق پلی وینیل کلراید با ولتاژ اسمی تا و خود ۴۵۰/۷۵۰ ولت- قسمت سوم	---	ISIRI 607-3
۲	کابل ها برای سیم کشی نصب ثابت	✓		سیم و کابل با عایق پلی وینیل کلراید با ولتاژ اسمی تا و خود ۴۵۰/۷۵۰ ولت- قسمت چهارم	---	ISIRI 607-4
۳	کابل ها و بندهای قابل انعطاف	✓		سیم و کابل با عایق پلی وینیل کلراید با ولتاژ اسمی تا و خود ۴۵۰/۷۵۰ ولت- قسمت پنجم	---	INSO 607-5
۴	کابل های قدرت با عایق اکستروژنه		✓	کابل های قدرت با عایق اکستروژنه شده و تجهیزات جانبی آنها برای ولتاژهای از ( $U_n = 1.2Kv$ تا و خود ( $U_m = 36Kv$ ) ، $30Kv$ قسمت 1 بجز آزمون های سختی، مقاومت در برابر ارن، میزان فلورور و میزان دوده	---	INSO 3569-1

۱- محصول محور: آزمایشگاه جهت انجام کلیه آزمون های مندرج در استاندارد ویژگی های محصول. تأیید صلاحیت شده است.  
۲- آزمون محور: آزمایشگاه جهت انجام آزمون های مندرج در جدول فوق تأیید صلاحیت شده است.

نیره پیروزبخت  
رئیس شورای تأیید صلاحیت ایران

علیرضا خاکی فیروز  
رئیس مرکز ملی تأیید صلاحیت ایران

تایید فرموده

صفحه ۲ از ۲

MEDIUM & HIGH VOLTAGE CABLES



Part 1

## ▶ Medium & High voltage cables

(With Copper Conductor)

(3.6/6)7.2 KV , (6/10)12 KV , (8.7/15)17.5 KV , (12/20)24 KV  
(18/30)36 KV , (38/66)72 KV

- ▶ CU/SC/XLPE/SC/SCT/CWS/PVC - N2XSY
- ▶ CU/SC/XLPE/SC/SCT/ICWS/PVC - N2XSEY
- ▶ CU/SC/XLPE/SC/SCT/CWS/BD/AWA/PVC - N2XSYRY
- ▶ CU/SC/XLPE/SC/SCT/CWS/BD/ATA/PVC - N2XSYBY
- ▶ CU/SC/XLPE/SC/SCT/ICWS/BD/SWA/PVC - N2XSEYRY
- ▶ CU/SC/XLPE/SC/SCT/ICWS/BD/DSTA/PVC - N2XSEYBY
- ▶ CU/SC/XLPE/SC/SCT/CWS/BD/LSH/BD/AWA/PVC - N2XSYKYRY
- ▶ CU/SC/XLPE/SC/SCT/ICWS/BD/LSH/BD/SWA/PVC - N2XSEYKYRY





XLPE INSULATED, PVC SHEATHED, SINGLE CORE



N2XSY

**Application :** For electricity in public network and industrial plants.

For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial .

**Specification :** IEC 60502-2 , IEC 60840

**Construction :**

- 1 - Conductor : Plain annealed copper, class2 acc. to IEC 60228 , circular compacted (RM)
- 2 - Semi-conducting : screen of semi-conducting compound
- 3 - Insulation: Cross-linked polyethylene –XLPE
- 4 - Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5 - Metallic screen: copper wire and copper tape applied helically
- 6 - Wrapping : at least 1 layer of plastic tape
- 7 - Outer sheath : Extruded polyvinyl chloride - PVC  
colour is red, other colour on request.

**Technical data :**

- 1 - Temperature : -30°C to +90°C
- 2 - Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3 - Conductor resistance : As per class 2 of IEC 60228
- 4 - Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5 - Flame retardant : Acc. IEC 60332-1
- 6 - Min. bending radius : 15 x cable-Ø

### N2XSY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	2.5	1.8	18	630	0.43	0.25	163	155
1X35/16	6.9	2.5	1.8	19	740	0.41	0.28	194	189
1X50/16	8.2	2.5	1.8	21.5	880	0.40	0.29	230	228
1X70/16	10	2.5	1.8	23	1100	0.37	0.35	281	286
1X95/16	11.4	2.5	1.8	24.5	1340	0.34	0.36	330	344
1X120/16	12.8	2.5	1.8	26	1620	0.33	0.37	375	396
1X150/25	14.4	2.5	1.9	28	1690	0.32	0.42	420	462
1X185/25	16	2.5	1.9	30	2320	0.31	0.47	472	522
1X240/25	18.5	2.6	2.0	32.6	2930	0.30	0.52	545	616
1X300/25	20.6	2.8	2.1	35.6	3520	0.29	0.57	615	716
1X400/35	23.4	3.0	2.2	39.2	4690	0.28	0.65	672	810
1X500/35	26.6	3.2	2.3	42.8	5760	0.26	0.69	746	944

**N2XSY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	3.4	1.8	20	690	0.45	0.20	160	156
1X35/16	6.9	3.4	1.8	21	800	0.43	0.22	191	189
1X50/16	8.2	3.4	1.8	23	940	0.41	0.24	226	228
1X70/16	10	3.4	1.8	25	1190	0.40	0.28	276	284
1X95/16	11.4	3.4	1.8	26	1420	0.39	0.31	330	346
1X120/16	12.8	3.4	1.8	28	1700	0.37	0.34	374	404
1X150/25	14.4	3.4	1.9	30	2090	0.36	0.37	420	462
1X185/25	16	3.4	2.0	32	2440	0.35	0.40	472	528
1X240/25	18.5	3.4	2.1	34	3030	0.33	0.45	546	622
1X300/25	20.6	3.4	2.1	37	3670	0.32	0.49	615	714
1X400/35	23.4	3.4	2.2	40	4580	0.31	0.55	682	822
1X500/35	26.6	3.4	2.3	43	5860	0.30	0.61	764	966

**N2XSY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	4.5	1.8	22	760	0.47	0.16	160	159
1X35/16	6.9	4.5	1.8	23.5	875	0.45	0.18	191	193
1X50/16	8.2	4.5	1.8	25	1020	0.42	0.20	226	232
1X70/16	10	4.5	1.8	26.5	1250	0.40	0.23	276	289
1X95/16	11.4	4.5	1.8	28	1510	0.38	0.25	330	351
1X120/16	12.8	4.5	1.9	30	1800	0.37	0.28	375	406
1X150/25	14.4	4.5	1.9	32.5	2170	0.36	0.30	420	465
1X185/25	16	4.5	2	34	2560	0.35	0.32	472	530
1X240/25	18.5	4.5	2.1	36.5	3160	0.33	0.36	545	625
1X300/25	20.6	4.5	2.1	39.5	3800	0.32	0.41	616	722
1X400/35	23.4	4.5	2.3	42	4800	0.30	0.45	686	846
1X500/35	26.6	4.5	2.4	45	5960	0.28	0.49	772	984


**N2XSY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X35/16	6.9	5.5	1.8	25.5	956	0.47	0.16	194	200
1X50/16	8.2	5.5	1.8	27	1090	0.46	0.17	230	240
1X70/16	10	5.5	1.9	29	1350	0.43	0.19	280	296
1X95/16	11.4	5.5	1.9	30.5	1620	0.41	0.21	336	359
1X120/16	12.8	5.5	2	32	1900	0.40	0.23	380	416
1X150/25	14.4	5.5	2.1	35	2300	0.38	0.25	428	478
1X185/25	16	5.5	2.1	36.5	2700	0.37	0.27	482	544
1X240/25	18.5	5.5	2.2	39	3260	0.36	0.30	555	640
1X300/25	20.6	5.5	2.3	42	3960	0.35	0.32	627	738
1X400/35	23.4	5.5	2.4	44.5	4910	0.33	0.36	694	792
1X500/35	26.6	5.5	2.5	48	6100	0.32	0.40	776	988

**N2XSY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	F/kmµ	A	A
1X50/16	8.2	8	2	33	1500	0.49	0.13	232	242
1X70/16	10	8	2.1	35	1700	0.46	0.15	282	298
1X95/16	11.4	8	2.1	36	1900	0.44	0.16	337	360
1X120/16	12.8	8	2.2	38	2200	0.43	0.17	382	418
1X150/25	14.4	8	2.2	40	2500	0.41	0.19	431	480
1X185/25	16	8	2.3	42	2870	0.40	0.20	484	546
1X240/25	18.5	8	2.4	44	3500	0.38	0.22	558	646
1X300/25	20.6	8	2.5	47	4000	0.37	0.24	630	742
1X400/35	23.4	8	2.6	50	5200	0.35	0.27	696	796
1X500/35	26.6	8	2.7	53	6300	0.34	0.29	780	996



**N2XSY , 38/66(72) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X95/16	11.4	13	2.6	49.4	2870	0.51	0.11	340	362
1X120/16	12.8	13	2.6	51	3160	0.45	0.13	384	420
1X150/25	14.4	12	2.5	54	3620	0.44	0.14	432	480
1X185/25	16	12	2.5	55.6	4050	0.42	0.15	486	548
1X240/25	18.5	11	2.5	56	4520	0.40	0.17	560	650
1X300/25	20.6	11	2.6	58.4	5180	0.36	0.19	631	745
1X400/35	23.4	10.5	2.7	62	6120	0.37	0.21	696	800
1X500/50	26.6	10.5	2.7	63.4	7080	0.36	0.23	780	998
1X630/50	29.4	10.5	2.9	66.8	8560	0.34	0.26	892	1096



▶ XLPE INSULATED, PVC SHEATHED, MULTI CORE



### N2XSEY

**Application :** For electricity in public network and industrial plants.

For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2

**Construction :**

- 1- Conductor : Plain annealed copper, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically over each core
- 6-inner covering : Extruded polyvinyl chloride pvc, filling interstices
- 7- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### N2XSEY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	2.5	2.0	34	1900	0.40	0.25	157	121
3X35/16	6.9	2.5	2.2	37	2340	0.39	0.28	187	147
3X50/16	8.2	2.5	2.4	45	2840	0.38	0.29	220	177
3X70/16	10	2.5	2.5	49	3670	0.35	0.35	270	220
3X95/16	11.4	2.5	2.6	52	4690	0.32	0.36	320	270
3X120/16	12.8	2.5	2.7	55	5670	0.31	0.37	365	310
3X150/25	14.4	2.5	2.9	60	6720	0.30	0.42	410	355
3X185/25	16	2.5	3	64	7960	0.29	0.47	460	400
3X240/25	18.5	2.6	3.2	70	10200	0.28	0.52	530	474
3X300/25	20.6	2.8	3.4	76	12600	0.27	0.57	594	546
3X400/35	23.4	3	3.7	83	14900	0.26	0.65	672	624

**N2XSEY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	3.4	2.3	38.5	2260	0.44	0.21	157	125
3X35/16	6.9	3.4	2.4	43	2690	0.42	0.22	187	151
3X50/16	8.2	3.4	2.5	49	3310	0.41	0.24	221	181
3X70/16	10	3.4	2.7	53	4070	0.38	0.28	270	225
3X95/16	11.4	3.4	2.8	56	5140	0.37	0.31	320	273
3X120/16	12.8	3.4	2.9	60	6140	0.35	0.34	364	315
3X150/25	14.4	3.4	3.0	64	7200	0.34	0.37	410	360
3X185/25	16	3.4	3.2	68	8400	0.33	0.40	460	408
3X240/25	18.5	3.4	3.4	74	10640	0.31	0.45	528	478
3X300/25	20.6	3.4	3.5	79	13100	0.30	0.49	596	550
3X400/35	23.4	3.4	3.7	85	15700	0.29	0.55	665	626

**N2XSEY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	4.5	2.3	43	2680	0.42	0.16	157	130
3X35/16	6.9	4.5	2.4	46	3180	0.40	0.18	187	155
3X50/16	8.2	4.5	2.5	51	3710	0.38	0.20	220	185
3X70/16	10	4.5	2.6	54	4595	0.35	0.23	270	230
3X95/16	11.4	4.5	2.8	59	5720	0.34	0.25	320	278
3X120/16	12.8	4.5	2.9	63	6775	0.32	0.28	364	320
3X150/25	14.4	4.5	3.0	67	7880	0.31	0.30	410	366
3X185/25	16	4.5	3.1	71	9180	0.30	0.32	458	414
3X240/25	18.5	4.5	3.3	77	11400	0.29	0.36	530	484
3X300/25	20.6	4.5	3.4	84	13860	0.28	0.41	596	556
3X400/35	23.4	4.5	3.6	89	16400	0.27	0.43	665	629

**N2XSEY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X35/16	6.9	5.5	2.6	50	3650	0.45	0.16	187	158
3X50/16	8.2	5.5	2.9	54.5	4640	0.44	0.17	220	190
3X70/16	10	5.5	3	57.5	5580	0.41	0.19	270	234
3X95/16	11.4	5.5	3.1	62	6450	0.39	0.21	320	283
3X120/16	12.8	5.5	3.2	67	7380	0.38	0.23	364	328
3X150/25	14.4	5.5	3.4	70	8920	0.36	0.25	410	370
3X185/25	16	5.5	3.5	75	10330	0.35	0.27	460	420
3X240/25	18.5	5.5	3.7	79	12180	0.34	0.30	530	492
3X300/25	20.6	5.5	3.8	87	14560	0.33	0.32	596	564
3X400/35	23.4	5.5	4	94	17860	0.31	0.36	668	634

**N2XSEY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X50/16	8.2	8	3.2	71	6700	0.47	0.13	220	190
3X70/16	10	8	3.4	75	7500	0.44	0.15	270	234
3X95/16	11.4	8	3.5	78	8800	0.42	0.16	320	284
3X120/16	12.8	8	3.6	81	9900	0.41	0.17	364	328
3X150/25	14.4	8	3.7	86	11400	0.39	0.19	410	370
3X185/25	16	8	3.9	90	12900	0.38	0.20	460	420
3X240/25	18.5	8	4.1	96	15300	0.36	0.22	530	494
3X300/25	20.6	8	4.2	100	18300	0.35	0.24	596	566
3X400/35	23.4	8	4.4	107	21500	0.32	0.27	670	636

▶ XLPE INSULATED, ARMOUR, PVC SHEATHED, SINGLE CORE



N2XSYRY

**Application :** For electricity in public network and industrial plants.

For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2 , IEC 60840

**Construction :**

- 1- Conductor : Plain annealed copper, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically
- 6- Wrapping : at least 1 layer of plastic tape
- 7- Bedding : Extruded polyvinyl chloride –PVC, black
- 8- Armour : Round aluminum wire
- 9- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

**N2XSYRY , 3.6/6(7.2) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	2.5	1.6	1.8	24.5	960	0.46	0.26	164	166
1X35/16	6.9	2.5	1.6	1.8	25.5	1090	0.44	0.28	195	200
1X50/16	8.2	2.5	1.6	1.8	27	1250	0.40	0.29	230	240
1X70/16	10	2.5	1.6	1.9	29	1520	0.37	0.35	280	300
1X95/16	11.4	2.5	1.6	1.9	30	1770	0.34	0.36	330	360
1X120/16	12.8	2.5	1.6	2	32	2060	0.33	0.37	375	415
1X150/25	14.4	2.5	2	2.1	35	2570	0.32	0.42	414	470
1X185/25	16	2.5	2	2.1	37	2950	0.31	0.47	460	530
1X240/25	18.5	2.6	2	2.2	39	3610	0.30	0.52	525	615
1X300/25	20.6	2.8	2	2.3	42	4360	0.29	0.57	586	702
1X400/35	23.4	3	2.5	2.5	47	5680	0.28	0.65	658	800
1X500/35	26.6	3.2	2.5	2.6	51	6880	0.26	0.69	734	880


**N2XSYRY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	3.4	1.6	1.8	26.5	1030	0.50	0.19	164	166
1X35/16	6.9	3.4	1.6	1.9	27.5	1170	0.48	0.22	195	200
1X50/16	8.2	3.4	1.6	1.9	29	1360	0.43	0.24	230	240
1X70/16	10	3.4	1.6	1.9	31	1650	0.40	0.28	280	300
1X95/16	11.4	3.4	1.6	2	32	2000	0.39	0.31	330	360
1X120/16	12.8	3.4	2	2.1	35	2250	0.37	0.34	375	415
1X150/25	14.4	3.4	2	2.1	37	2690	0.36	0.37	414	470
1X185/25	16	3.4	2	2.2	39	3170	0.35	0.40	460	530
1X240/25	18.5	3.4	2	2.3	41	3740	0.33	0.45	525	615
1X300/25	20.6	3.4	2	2.4	44	4520	0.32	0.49	586	702
1X400/35	23.4	3.4	2.5	2.5	48	5850	0.31	0.55	658	800
1X500/35	26.6	3.4	2.5	2.6	51	7500	0.30	0.61	734	880

**N2XSYRY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	4.5	1.6	1.9	28.5	1180	0.52	0.16	164	166
1X35/16	6.9	4.5	1.6	1.9	29.5	1300	0.49	0.18	195	200
1X50/16	8.2	4.5	1.6	1.9	32	1480	0.46	0.21	230	240
1X70/16	10	4.5	1.6	2	34	1810	0.44	0.23	280	300
1X95/16	11.4	4.5	2	2.1	36	2150	0.43	0.25	330	360
1X120/16	12.8	4.5	2	2.1	38	2460	0.41	0.27	375	415
1X150/25	14.4	4.5	2	2.2	40	2800	0.40	0.29	414	470
1X185/25	16	4.5	2	2.2	41	3220	0.39	0.32	460	530
1X240/25	18.5	4.5	2	2.3	44	3840	0.37	0.35	525	615
1X300/25	20.6	4.5	2.5	2.4	47	4720	0.36	0.39	586	702
1X400/35	23.4	4.5	2.5	2.5	50	5900	0.35	0.43	658	800
1X500/35	26.6	4.5	2.5	2.6	54	7580	0.34	0.48	734	880

**N2XSRY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X35/16	6.9	5.5	2	2	32.5	1490	0.50	0.16	195	200
1X50/16	8.2	5.5	2	2.1	34	1760	0.46	0.17	230	240
1X70/16	10	5.5	2	2.1	36	2050	0.43	0.19	280	300
1X95/16	11.4	5.5	2	2.2	38	2300	0.41	0.21	330	360
1X120/16	12.8	5.5	2	2.2	39	2670	0.40	0.23	375	415
1X150/25	14.4	5.5	2	2.3	41	2920	0.38	0.25	414	470
1X185/25	16	5.5	2	2.3	43	3500	0.37	0.27	460	530
1X240/25	18.5	5.5	2.5	2.5	47	4320	0.36	0.30	525	615
1X300/25	20.6	5.5	2.5	2.5	49	4970	0.35	0.32	586	702
1X400/35	23.4	5.5	2.5	2.6	52	6160	0.33	0.36	658	800
1X500/35	26.6	5.5	2.5	2.8	56	7920	0.32	0.40	734	880

**N2XSRY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X50/16	8.2	8	2	2.2	40	2050	0.49	0.13	230	240
1X70/16	10	8	2	2.3	42	2300	0.46	0.15	280	300
1X95/16	11.4	8	2	2.3	43	2650	0.44	0.16	330	360
1X120/16	12.8	8	2.5	2.4	46	2950	0.43	0.17	375	415
1X150/25	14.4	8	2.5	2.5	48	3180	0.41	0.19	414	470
1X185/25	16	8	2.5	2.6	50	3950	0.40	0.20	460	530
1X240/25	18.5	8	2.5	2.7	53	4680	0.38	0.22	525	615
1X300/25	20.6	8	2.5	2.7	55	5350	0.37	0.24	586	702
1X400/35	23.4	8	2.5	2.8	58	6550	0.35	0.27	658	800
1X500/35	26.6	8	2.5	2.9	62	8100	0.34	0.29	734	880

**N2XSYRY , 38/66(72) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X95/16	11.4	13	2.5	2.7	59	4100	0.51	0.11	330	360
1X120/16	12.8	13	2.5	2.8	60	4500	0.45	0.13	375	415
1X150/25	14.4	12	2.5	2.8	61	4780	0.44	0.14	414	470
1X185/25	16	12	2.5	2.9	62	5250	0.42	0.15	460	530
1X240/25	18.5	11	2.5	3.0	65	5740	0.40	0.17	525	615
1X300/25	20.6	11	2.5	3.1	67	6480	0.38	0.19	586	702
1X400/35	23.4	10.5	2.5	3.2	71	7680	0.37	0.21	658	800
1X500/50	26.6	10.5	2.5	3.4	74	8860	0.36	0.23	738	880
1X630/50	29.4	10.5	3.15	3.5	82	10420	0.34	0.26	886	1066



▶ XLPE INSULATED, ARMOUR, PVC SHEATHED, SINGLE CORE



**N2XSYBY**

**Application :** For electricity in public network and industrial plants.

For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2 , IEC 60840

**Construction :**

- 1- Conductor : Plain annealed copper, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically
- 6- Wrapping : at least 1 layer of plastic tape
- 7- Bedding : Extruded polyvinyl chloride –PVC, black
- 8- Armour : Double aluminum tape
- 9- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

**N2XSYBY , 3.6/6(7.2) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape Thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	2.5	0.5	1.8	24	850	0.46	0.26	164	166
1X35/16	6.9	2.5	0.5	1.8	25	980	0.44	0.28	195	200
1X50/16	8.2	2.5	0.5	1.8	26	1110	0.40	0.29	230	240
1X70/16	10	2.5	0.5	1.8	27	1330	0.37	0.35	280	300
1X95/16	11.4	2.5	0.5	1.9	29	1620	0.34	0.36	330	360
1X120/16	12.8	2.5	0.5	1.9	31	1900	0.33	0.37	375	415
1X150/25	14.4	2.5	0.5	2	33	2280	0.32	0.42	414	470
1X185/25	16	2.5	0.5	2.1	35	2680	0.31	0.47	460	530
1X240/25	18.5	2.6	0.5	2.2	37	3310	0.30	0.52	525	615
1X300/25	20.6	2.8	0.5	2.2	40	3950	0.29	0.57	586	702
1X400/35	23.4	3	0.5	2.4	44	4900	0.28	0.65	658	800
1X500/35	26.6	3.2	0.5	2.5	48	5800	0.26	0.69	734	880

**N2XSYBY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape Thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	3.4	0.5	1.8	25.5	940	0.50	0.19	164	166
1X35/16	6.9	3.4	0.5	1.8	26.5	1150	0.48	0.22	195	200
1X50/16	8.2	3.4	0.5	1.8	28	1270	0.43	0.24	230	240
1X70/16	10	3.4	0.5	1.9	30	1550	0.40	0.28	280	300
1X95/16	11.4	3.4	0.5	1.9	31	1820	0.39	0.31	330	360
1X120/16	12.8	3.4	0.5	2	33	2180	0.37	0.34	375	415
1X150/25	14.4	3.4	0.5	2.1	35	2610	0.36	0.37	414	470
1X185/25	16	3.4	0.5	2.1	37	3060	0.35	0.40	460	530
1X240/25	18.5	3.4	0.5	2.2	39	3420	0.33	0.45	525	615
1X300/25	20.6	3.4	0.5	2.3	41	4040	0.32	0.49	586	702
1X400/35	23.4	3.4	0.5	2.4	45	5000	0.31	0.55	658	800
1X500/35	26.6	3.4	0.5	2.5	48	6180	0.30	0.61	734	880

**N2XSYBY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape Thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	4.5	0.5	1.8	27	1130	0.48	0.19	164	166
1X35/16	6.9	4.5	0.5	1.8	28	1260	0.48	0.20	195	200
1X50/16	8.2	4.5	0.5	1.9	30	1420	0.46	0.21	230	240
1X70/16	10	4.5	0.5	1.9	31.5	1670	0.44	0.23	280	300
1X95/16	11.4	4.5	0.5	2	33	2000	0.43	0.25	330	360
1X120/16	12.8	4.5	0.5	2	35	2260	0.41	0.27	375	415
1X150/25	14.4	4.5	0.5	2.1	37	2670	0.40	0.29	414	470
1X185/25	16	4.5	0.5	2.1	39	3180	0.39	0.32	460	530
1X240/25	18.5	4.5	0.5	2.2	41	3720	0.37	0.35	525	615
1X300/25	20.6	4.5	0.5	2.3	43	4400	0.36	0.39	586	702
1X400/35	23.4	4.5	0.5	2.4	46	5380	0.35	0.43	658	800
1X500/35	26.6	4.5	0.5	2.5	50	6560	0.34	0.48	734	880

**N2XSYBY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape Thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X35/16	6.9	5.5	0.5	1.9	30.5	1350	0.50	0.16	195	200
1X50/16	8.2	5.5	0.5	2	32	1540	0.46	0.17	230	240
1X70/16	10	5.5	0.5	2	34	1800	0.43	0.19	280	300
1X95/16	11.4	5.5	0.5	2.1	35	2120	0.41	0.21	330	360
1X120/16	12.8	5.5	0.5	2.1	37	2440	0.40	0.23	375	415
1X150/25	14.4	5.5	0.5	2.2	39	2750	0.38	0.25	414	470
1X185/25	16	5.5	0.5	2.3	41	3240	0.37	0.27	460	530
1X240/25	18.5	5.5	0.5	2.4	44	3840	0.36	0.30	525	615
1X300/25	20.6	5.5	0.5	2.4	46	4450	0.35	0.32	586	702
1X400/35	23.4	5.5	0.5	2.5	49	5820	0.33	0.36	658	800
1X500/35	26.6	5.5	0.5	2.7	53	7100	0.32	0.40	734	880

**N2XSYBY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape Thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X50/16	8.2	8	0.5	2.2	38	1800	0.49	0.13	230	240
1X70/16	10	8	0.5	2.2	39	2070	0.46	0.15	280	300
1X95/16	11.4	8	0.5	2.3	41	2290	0.44	0.16	330	360
1X120/16	12.8	8	0.5	2.4	43	2550	0.43	0.17	375	415
1X150/25	14.4	8	0.5	2.4	45	3150	0.41	0.19	414	470
1X185/25	16	8	0.5	2.5	47	3550	0.40	0.20	460	530
1X240/25	18.5	8	0.5	2.5	49	4150	0.38	0.22	525	615
1X300/25	20.6	8	0.5	2.6	52	4830	0.37	0.24	586	702
1X400/35	23.4	8	0.5	2.8	55	6150	0.35	0.27	658	800
1X500/35	26.6	8	0.5	3.0	58	7360	0.34	0.29	734	880

**N2XSYBY , 38/66(72) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape Thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X95/16	11.4	13	0.5	2.6	56	3900	0.51	0.11	330	360
1X120/16	12.8	13	0.5	2.7	57	4290	0.45	0.13	375	415
1X150/25	14.4	12	0.5	2.7	58	4570	0.44	0.14	414	470
1X185/25	16	12	0.5	2.8	59	5040	0.42	0.15	460	530
1X240/25	18.5	11	0.5	2.9	62	5520	0.40	0.17	525	615
1X300/25	20.6	11	0.5	3.0	64	6260	0.38	0.19	586	702
1X400/35	23.4	10.5	0.5	3.1	67	7450	0.37	0.21	658	800
1X500/50	26.6	10.5	0.5	3.3	71	8580	0.36	0.23	734	880
1X630/50	29.4	10.5	0.5	3.4	76	10040	0.34	0.26	886	1066

▶ XLPE INSULATED, ARMOUR, PVC SHEATHED, MULTI CORE



### N2XSEYRY

**Application :** For electricity in public network and industrial plants.

For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2

**Construction :**

- 1- Conductor : Plain annealed copper, class2 acc. to IEC 60228, circular compacted(KM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically over each core
- 6- Bedding : Extruded polyvinyl chloride –PVC, black
- 7- Armour : Round steel wire
- 8- Wrapping : at least 1 layer of plastic tape
- 9- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U0 for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### N2XSEYRY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	2.5	2	2.3	41.5	3400	0.42	0.25	154	126
3X35/16	6.9	2.5	2.5	2.4	46	4320	0.40	0.27	185	153
3X50/16	8.2	2.5	2.5	2.6	50	5360	0.38	0.29	218	183
3X70/16	10	2.5	2.5	2.7	54	6420	0.35	0.35	264	226
3X95/16	11.4	2.5	2.5	2.8	57	7410	0.32	0.36	314	273
3X120/16	12.8	2.5	2.5	2.9	61	8610	0.31	0.37	356	314
3X150/25	14.4	2.5	2.5	3.1	66	10000	0.30	0.42	396	354
3X185/25	16	2.5	2.5	3.2	72	11470	0.29	0.47	443	400
3X240/25	18.5	2.6	3.15	3.4	76	14500	0.28	0.52	504	467
3X300/25	20.6	2.8	3.15	3.6	83	17650	0.27	0.57	560	530
3X400/35	23.4	3	3.15	3.7	89	21850	0.26	0.65	634	605

**N2XSEYRY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	3.4	2.5	2.5	46.5	3950	0.45	0.20	154	129
3X35/16	6.9	3.4	2.5	2.6	51	4900	0.43	0.22	185	157
3X50/16	8.2	3.4	2.5	2.7	55	5930	0.41	0.24	217	186
3X70/16	10	3.4	2.5	2.8	58	7650	0.38	0.28	265	230
3X95/16	11.4	3.4	2.5	2.9	62	8810	0.37	0.31	313	276
3X120/16	12.8	3.4	2.5	3.1	65	9450	0.35	0.34	354	316
3X150/25	14.4	3.4	2.5	3.2	70	10800	0.34	0.37	395	360
3X185/25	16	3.4	3.15	3.4	75	12750	0.33	0.40	442	404
3X240/25	18.5	3.4	3.15	3.6	81	15100	0.31	0.45	503	470
3X300/25	20.6	3.4	3.15	3.7	87	18300	0.30	0.49	560	530
3X400/35	23.4	3.4	3.15	4	94	22400	0.29	0.55	636	605

**N2XSEYRY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	4.5	2.5	2.6	52.5	4250	0.42	0.19	155	133
3X35/16	6.9	4.5	2.5	2.7	56	5300	0.40	0.20	183	160
3X50/16	8.2	4.5	2.5	2.8	60	6300	0.38	0.21	217	190
3X70/16	10	4.5	2.5	2.9	64	8400	0.37	0.23	264	234
3X95/16	11.4	4.5	2.5	3.1	69	9250	0.36	0.25	313	282
3X120/16	12.8	4.5	2.5	3.2	71	10420	0.35	0.27	352	320
3X150/25	14.4	4.5	3.15	3.4	77	12100	0.34	0.29	395	365
3X185/25	16	4.5	3.15	3.5	83	13400	0.33	0.32	440	410
3X240/25	18.5	4.5	3.15	3.7	88	15750	0.32	0.35	503	475
3X300/25	20.6	4.5	3.15	3.8	94	18900	0.31	0.39	560	534
3X400/35	23.4	4.5	3.15	4.0	101	22950	0.29	0.42	638	606

**N2XSEYRY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X35/16	6.9	5.5	2.5	2.9	60	6250	0.46	0.16	184	162
3X50/16	8.2	5.5	2.5	3.0	64	7100	0.44	0.17	216	192
3X70/16	10	5.5	2.5	3.2	68	8550	0.41	0.19	263	236
3X95/16	11.4	5.5	2.5	3.3	71	9460	0.39	0.21	312	283
3X120/16	12.8	5.5	3.15	3.4	76	11450	0.38	0.23	353	325
3X150/25	14.4	5.5	3.15	3.6	81	13150	0.36	0.25	394	367
3X185/25	16	5.5	3.15	3.7	86	14840	0.35	0.27	440	412
3X240/25	18.5	5.5	3.15	4.0	92	16700	0.34	0.30	503	478
3X300/25	20.6	5.5	3.15	4.1	97	20200	0.33	0.32	564	538
3X400/35	23.4	5.5	3.15	4.3	106	22950	0.33	0.36	640	608

**N2XSEYRY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X50/16	8.2	8	3.15	3.5	77	9800	0.47	0.13	216	192
3X70/16	10	8	3.15	3.6	81	11300	0.44	0.15	263	236
3X95/16	11.4	8	3.15	3.7	84	12800	0.42	0.16	312	283
3X120/16	12.8	8	3.15	3.8	88	14700	0.41	0.17	353	325
3X150/25	14.4	8	3.15	4	94	16500	0.39	0.19	394	367
3X185/25	16	8	3.15	4.1	99	18500	0.38	0.20	440	412
3X240/25	18.5	8	3.15	4.2	104	21100	0.36	0.22	503	478
3X300/25	20.6	8	3.15	4.4	109	24000	0.35	0.24	564	538
3X400/35	23.4	8	3.15	4.7	118	27800	0.32	0.27	640	608

▶ XLPE INSULATED, ARMOUR, PVC SHEATHED, MULTI CORE



**N2XSEYBY**

**Application :** For electricity in public network and industrial plants.  
For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2

**Construction :**

- 1- Conductor : Plain annealed copper, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically over each core
- 6-inner covering : Extruded polyvinyl chloride pvc, filling interstices
- 7- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

**N2XSEYBY , 3.6/6(7.2) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx Overall diameter	Approx weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	2.5	0.5	2.3	40	2750	0.42	0.27	154	126
3X35/16	6.9	2.5	0.5	2.4	44	3320	0.40	0.28	185	153
3X50/16	8.2	2.5	0.5	2.5	47	4180	0.38	0.29	218	183
3X70/16	10	2.5	0.5	2.6	51	5000	0.35	0.35	264	226
3X95/16	11.4	2.5	0.5	2.7	54	5985	0.32	0.36	314	273
3X120/16	12.8	2.5	0.5	2.8	58	6890	0.31	0.37	356	314
3X150/25	14.4	2.5	0.5	3	62	8150	0.30	0.42	396	354
3X185/25	16	2.5	0.5	3.1	66	9620	0.29	0.47	443	400
3X240/25	18.5	2.6	0.5	3.3	72	11960	0.28	0.52	504	467
3X300/25	20.6	2.8	0.5	3.5	78	15800	0.27	0.57	560	530
3X400/35	23.4	3.0	0.5	3.8	87	19200	0.26	0.65	634	605



**N2XSEYBY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx Overall diameter	Approx weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	3.4	0.5	2.4	44.5	3320	0.45	0.20	154	126
3X35/16	6.9	3.4	0.5	2.5	47.4	3900	0.43	0.22	185	153
3X50/16	8.2	3.4	0.5	2.6	51	5060	0.41	0.24	218	183
3X70/16	10	3.4	0.5	2.7	55	5860	0.38	0.28	264	226
3X95/16	11.4	3.4	0.5	2.8	58	7010	0.37	0.31	314	273
3X120/16	12.8	3.4	0.5	3	62	8020	0.35	0.34	356	314
3X150/25	14.4	3.4	0.5	3.1	66	8720	0.34	0.37	396	354
3X185/25	16	3.4	0.5	3.2	70	11100	0.33	0.40	443	400
3X240/25	18.5	3.4	0.5	3.4	76	14500	0.31	0.45	504	467
3X300/25	20.6	3.4	0.8	3.6	82	17110	0.30	0.49	560	530
3X400/35	23.4	3.4	0.8	3.8	89	20450	0.29	0.55	634	605

**N2XSEYBY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx Overall diameter	Approx weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	4.5	0.5	2.5	50	3700	0.42	0.17	154	126
3X35/16	6.9	4.5	0.5	2.6	54	4450	0.40	0.19	185	153
3X50/16	8.2	4.5	0.5	2.7	58	5750	0.38	0.21	218	183
3X70/16	10	4.5	0.5	2.8	62	6450	0.37	0.23	264	226
3X95/16	11.4	4.5	0.5	3.0	66	7760	0.36	0.25	314	273
3X120/16	12.8	4.5	0.5	3.1	69	8850	0.35	0.27	356	314
3X150/25	14.4	4.5	0.5	3.2	74	9620	0.34	0.29	396	354
3X185/25	16	4.5	0.8	3.3	80	12400	0.33	0.32	443	400
3X240/25	18.5	4.5	0.8	3.5	84	15600	0.32	0.35	504	467
3X300/25	20.6	4.5	0.8	3.7	88	18360	0.31	0.39	560	530
3X400/35	23.4	4.5	0.8	3.9	96	21540	0.29	0.42	634	605



**N2XSEYBY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx Overall diameter	Approx weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X35/16	6.9	5.5	0.5	2.7	57	4750	0.46	0.16	185	153
3X50/16	8.2	5.5	0.5	2.8	61	6050	0.44	0.17	218	183
3X70/16	10	5.5	0.5	3.0	65	6850	0.41	0.19	264	226
3X95/16	11.4	5.5	0.5	3.2	68	8120	0.39	0.21	314	273
3X120/16	12.8	5.5	0.5	3.3	72	9300	0.38	0.23	356	314
3X150/25	14.4	5.5	0.5	3.4	76	10350	0.36	0.25	396	354
3X185/25	16	5.5	0.8	3.5	83	13100	0.35	0.27	443	400
3X240/25	18.5	5.5	0.8	3.7	87	15400	0.34	0.30	504	467
3X300/25	20.6	5.5	0.8	3.9	92	18650	0.33	0.32	560	530
3X400/35	23.4	5.5	0.8	4.1	100	21750	0.33	0.36	634	605

**N2XSEYBY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx Overall diameter	Approx weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X50/16	8.2	8	0.5	3.3	73	7400	0.47	0.13	215	212
3X70/16	10	8	0.5	3.4	77	9000	0.44	0.15	262	263
3X95/16	11.4	8	0.8	3.6	81	10300	0.42	0.16	315	320
3X120/16	12.8	8	0.8	3.7	85	11500	0.41	0.17	358	368
3X150/25	14.4	8	0.8	3.9	89	12300	0.39	0.19	402	418
3X185/25	16	8	0.8	4.0	93	14400	0.38	0.20	454	477
3X240/25	18.5	8	0.8	4.2	99	17000	0.36	0.22	525	560
3X300/25	20.6	8	0.8	4.3	104	20300	0.35	0.24	591	640
3X400/35	23.4	8	0.8	4.5	110	24800	0.32	0.27	666	734

▶ XLPE INSULATED, LEAD SHEATHED, ARMOUR, PVC SHEATHED, SINGLE CORE



### N2XSYKYRY

**Application :** For electricity in public network and industrial plants.  
Recommended for direct burial, especially in presence of oil aggressive chemical substances.

**Specification :** IEC 60502-2

**Construction :**

- 1- Conductor : Plain annealed copper, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically
- 6- Wrapping : at least 1 layer of plastic tape
- 7- Bedding-1 : Extruded polyvinyl chloride –PVC, black
- 8- Metal sheath : one layer lead
- 9- Bedding-2 : Extruded polyvinyl chloride –PVC, black
- 10- Armour : Round aluminum wire
- 11- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### N2XSYKYRY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20° C	Current rating air in At 30° C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	2.5	1.2	1.6	1.9	29	1820	0.44	0.25	164	166
1X35/16	6.9	2.5	1.3	1.6	1.9	30	1950	0.42	0.27	195	200
1X50/16	8.2	2.5	1.4	1.6	1.9	32	2260	0.40	0.29	230	240
1X70/16	10	2.5	1.4	2	2.0	34	2620	0.37	0.35	280	300
1X95/16	11.4	2.5	1.5	2	2.0	35	3140	0.34	0.36	330	360
1X120/16	12.8	2.5	1.5	2	2.1	38	3550	0.33	0.37	375	415
1X150/25	14.4	2.5	1.6	2	2.1	39	3870	0.32	0.42	414	470
1X185/25	16	2.5	1.6	2	2.2	41	4560	0.31	0.47	460	530
1X240/25	18.5	2.6	1.7	2.5	2.3	45	5320	0.30	0.52	525	615
1X300/25	20.6	2.8	1.7	2.5	2.4	48	6350	0.29	0.57	586	702
1X400/35	23.4	3	1.8	2.5	2.5	52	7680	0.28	0.65	658	800
1X500/35	26.6	3.2	1.9	2.5	2.7	57	9280	0.26	0.69	734	880



**N2XSYKYRY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	3.4	1.3	1.6	1.9	30	1870	0.47	0.20	164	166
1X35/16	6.9	3.4	1.3	1.6	1.9	31	2040	0.45	0.22	195	200
1X50/16	8.2	3.4	1.4	1.6	1.9	33	2340	0.43	0.24	230	240
1X70/16	10	3.4	1.4	2	2.0	36	2790	0.40	0.28	280	300
1X95/16	11.4	3.4	1.5	2	2.1	37	3300	0.39	0.31	330	360
1X120/16	12.8	3.4	1.5	2	2.1	39	3660	0.37	0.34	375	415
1X150/25	14.4	3.4	1.6	2	2.2	41	4080	0.36	0.37	414	470
1X185/25	16	3.4	1.6	2	2.3	43	4720	0.35	0.40	460	530
1X240/25	18.5	3.4	1.7	2	2.3	46	5580	0.33	0.45	525	615
1X300/25	20.6	3.4	1.7	2.5	2.5	50	6600	0.32	0.49	586	702
1X400/35	23.4	3.4	1.8	2.5	2.6	53	7800	0.31	0.55	658	800
1X500/35	26.6	3.4	1.9	2.5	2.7	58	9390	0.30	0.61	734	880

**N2XSYKYRY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	4.5	1.4	2	2.0	34	2350	0.50	0.18	164	166
1X35/16	6.9	4.5	1.4	2	2.0	36	2550	0.48	0.19	195	200
1X50/16	8.2	4.5	1.5	2	2.1	37	2620	0.46	0.21	230	240
1X70/16	10	4.5	1.5	2	2.1	39	3100	0.44	0.23	280	300
1X95/16	11.4	4.5	1.6	2	2.2	41	3650	0.43	0.25	330	360
1X120/16	12.8	4.5	1.6	2	2.3	43	4040	0.41	0.27	375	415
1X150/25	14.4	4.5	1.6	2	2.4	45	4520	0.40	0.29	414	470
1X185/25	16	4.5	1.7	2.5	2.4	48	5200	0.39	0.32	460	530
1X240/25	18.5	4.5	1.7	2.5	2.5	50	6180	0.37	0.35	525	615
1X300/25	20.6	4.5	1.8	2.5	2.5	53	7260	0.36	0.39	586	702
1X400/35	23.4	4.5	1.9	2.5	2.6	57	8440	0.35	0.43	658	800
1X500/35	26.6	4.5	2.0	2.5	2.8	61	10150	0.34	0.48	734	880

**N2XSYKYRY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X35/16	6.9	5.5	1.5	2	2.1	38	2800	0.47	0.16	195	200
1X50/16	8.2	5.5	1.5	2	2.1	39	3030	0.46	0.17	230	240
1X70/16	10	5.5	1.5	2	2.2	41	3450	0.43	0.19	280	300
1X95/16	11.4	5.5	1.6	2	2.3	43	3980	0.41	0.21	330	360
1X120/16	12.8	5.5	1.6	2	2.3	45	4400	0.40	0.23	375	415
1X150/25	14.4	5.5	1.7	2.5	2.4	47	4890	0.38	0.25	414	470
1X185/25	16	5.5	1.7	2.5	2.5	50	5600	0.37	0.27	460	530
1X240/25	18.5	5.5	1.8	2.5	2.5	52	6540	0.36	0.30	525	615
1X300/25	20.6	5.5	1.8	2.5	2.6	55	7400	0.35	0.32	586	702
1X400/35	23.4	5.5	1.9	2.5	2.7	59	8680	0.33	0.36	658	800
1X500/35	26.6	5.5	2.0	2.5	2.8	63	10360	0.32	0.40	734	880

**N2XSYKYRY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X50/16	8.2	8	1.6	2	2.3	45	3820	0.49	0.13	230	240
1X70/16	10	8	1.7	2.5	2.4	48	4500	0.46	0.15	280	300
1X95/16	11.4	8	1.7	2.5	2.5	50	4980	0.44	0.16	330	360
1X120/16	12.8	8	1.8	2.5	2.5	52	5540	0.43	0.17	375	415
1X150/25	14.4	8	1.8	2.5	2.6	54	6000	0.41	0.19	414	470
1X185/25	16	8	1.9	2.5	2.6	56	6680	0.40	0.20	460	530
1X240/25	18.5	8	1.9	2.5	2.7	59	7560	0.38	0.22	525	615
1X300/25	20.6	8	2.0	2.5	2.8	62	8590	0.37	0.24	586	702
1X400/35	23.4	8	2.1	2.5	2.9	65	9980	0.35	0.27	658	800
1X500/35	26.6	8	2.2	2.5	3.0	69	11700	0.34	0.29	734	880

▶ XLPE INSULATED, LEAD SHEATHED, ARMOUR, PVC SHEATHED, MULTI CORE



### N2XSEYKYRY

**Application :** For electricity in public network and industrial plants.

Recommended for direct burial, especially in presence of oil aggressive chemical substances.

**Specification :** IEC 60502-2

**Construction :**

- 1- Conductor : Plain annealed copper, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically over each core
- 6- Bedding-1 : Extruded polyvinyl chloride –PVC, black
- 7- Metal sheath : one layer lead
- 8- Bedding-2 : Extruded polyvinyl chloride –PVC, black
- 9- Armour : Round steel wire
- 10- Wrapping : at least 1 layer of plastic tape
- 11- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U0 for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### N2XSEYKYRY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	Inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	2.5	1.7	2.5	2.5	50	6250	0.42	0.25	151	127
3X35/16	6.9	2.5	1.8	2.5	2.6	54	7200	0.40	0.27	180	155
3X50/16	8.2	2.5	1.8	2.5	2.7	56	8000	0.38	0.29	212	182
3X70/16	10	2.5	2.0	2.5	2.9	62	9650	0.35	0.35	260	225
3X95/16	11.4	2.5	2.1	2.5	3.0	66	11250	0.32	0.36	306	270
3X120/16	12.8	2.5	2.2	2.5	3.2	71	13100	0.31	0.37	345	310
3X150/25	14.4	2.5	2.2	3.15	3.3	74.5	14450	0.30	0.42	384	346
3X185/25	16	2.5	2.3	3.15	3.4	82	17320	0.29	0.47	430	395
3X240/25	18.5	2.6	2.5	3.15	3.6	87	20840	0.28	0.52	487	546
3X300/25	20.6	2.8	2.7	3.15	3.8	96	25360	0.27	0.57	540	511

**N2XSEYKYRY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	3.4	1.9	2.5	2.7	55.5	7350	0.45	0.20	151	129
3X35/16	6.9	3.4	1.9	2.5	2.8	58	8140	0.43	0.22	180	156
3X50/16	8.2	3.4	2.0	2.5	2.9	62	9250	0.41	0.24	212	185
3X70/16	10	3.4	2.1	2.5	3.0	66	10820	0.38	0.28	260	230
3X95/16	11.4	3.4	2.2	2.5	3.2	71	12560	0.37	0.31	306	274
3X120/16	12.8	3.4	2.3	3.15	3.3	77	15100	0.35	0.34	345	314
3X150/25	14.4	3.4	2.4	2.5	3.4	81	16820	0.34	0.37	384	352
3X185/25	16	3.4	2.5	2.5	3.6	85	19100	0.33	0.40	430	398
3X240/25	18.5	3.4	2.6	2.5	3.8	92	22420	0.31	0.45	486	456

**N2XSEYKYRY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At20°C	Current rating air in At30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	4.5	2.0	2.5	2.9	62	8650	0.42	0.24	151	132
3X35/16	6.9	4.5	2.0	2.5	3.0	65	9520	0.40	0.22	180	158
3X50/16	8.2	4.5	2.1	2.5	3.1	68	10700	0.38	0.21	212	188
3X70/16	10	4.5	2.2	2.5	3.2	72	12300	0.37	0.23	260	232
3X95/16	11.4	4.5	2.3	3.15	3.4	79	14940	0.36	0.25	306	278
3X120/16	12.8	4.5	2.4	3.15	3.5	83	16800	0.35	0.27	345	320
3X150/25	14.4	4.5	2.5	3.15	3.6	87	18540	0.34	0.29	382	355
3X185/25	16	4.5	2.6	3.15	3.8	92	20920	0.33	0.32	426	400



**N2XSEYKYRY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating air in At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	5.5	2.1	2.5	3.1	69	10350	0.48	0.15	152	135
3X35/16	6.9	5.5	2.2	2.5	3.2	71	11100	0.46	0.16	180	162
3X50/16	8.2	5.5	2.3	2.5	3.3	74	12300	0.44	0.17	212	190
3X70/16	10	5.5	2.3	3.15	3.4	79	14520	0.41	0.19	260	235
3X95/16	11.4	5.5	2.5	3.15	3.6	85	16800	0.39	0.21	305	282
3X120/16	12.8	5.5	2.6	3.15	3.7	89	18840	0.38	0.23	344	320
3X150/25	14.4	5.5	2.7	3.15	3.8	93	20340	0.36	0.25	382	358

**N2XSEYKYRY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Lead sheath thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating air in At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	8	2.4	3.15	3.6	83	11950	0.51	0.11	152	135
3X35/16	6.9	8	2.5	3.15	3.7	86	12800	0.49	0.12	180	162
3X50/16	8.2	8	2.7	3.15	3.8	90	14400	0.47	0.13	212	190
3X70/16	10	8	2.8	3.15	4.0	94	19100	0.44	0.15	260	235
3X95/16	11.4	8	2.9	3.15	4.1	99	23200	0.42	0.16	305	282



Part 2

## ▶ Medium & High voltage cables

( With Aluminum Conductor )

(3.6/6)7.2 KV , (6/10)12 KV , (8.7/15)17.5 KV , (12/20)24 KV

(18/30)35 KV , (38/66)72 KV

- 
- ▶ AL/SC/XLPE/SC/SCT/CWS/PVC - NA2XSY
  - ▶ AL/SC/XLPE/SC/SCT/ICWS/PVC - NA2XSEY
  - ▶ AL/SC/XLPE/SC/SCT/CWS/BD/AWA/PVC - NA2XSRY
  - ▶ AL/SC/XLPE/SC/SCT/CWS/BD/ATA/PVC - NA2XSRYB
  - ▶ AL/SC/XLPE/SC/SCT/ICWS/BD/SWA/PVC - NA2XSEYR
  - ▶ AL/SC/XLPE/SC/SCT/ICWS/BD/DSTA/PVC - NA2XSEYBY





XLPE INSULATED, PVC SHEATHED, SINGLE CORE



NA2XSY

**Application :** For electricity in public network and industrial plants.  
For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2 , IEC 60840

**Construction :**

- 1- Conductor : Aluminum, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically
- 6- Wrapping : at least 1 layer of plastic tape
- 7- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U0 for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

NA2XSY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	2.5	1.8	18	480	0.43	0.25	126	114
1X35/16	6.9	2.5	1.8	19	534	0.41	0.28	147	135
1X50/16	8.2	2.5	1.8	21.5	596	0.40	0.29	174	164
1X70/16	10	2.5	1.8	23	692	0.37	0.35	214	205
1X95/16	11.4	2.5	1.8	24.5	794	0.34	0.36	255	252
1X120/16	12.8	2.5	1.8	26	906	0.33	0.37	286	290
1X150/25	14.4	2.5	1.9	28	1100	0.32	0.42	316	330
1X185/25	16	2.5	1.9	30	1255	0.31	0.47	355	375
1X240/25	18.5	2.6	2	32.6	1510	0.30	0.52	404	444
1X300/25	20.6	2.8	2.1	35.6	1760	0.29	0.57	460	506
1X400/35	23.4	3	2.2	39.2	2220	0.28	0.65	510	587
1X500/35	26.6	3.2	2.3	42.8	2740	0.26	0.69	604	690

**NA2XSY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	3.4	1.8	20	540	0.45	0.20	126	114
1X35/16	6.9	3.4	1.8	21	590	0.43	0.22	147	135
1X50/16	8.2	3.4	1.8	23	660	0.41	0.24	174	164
1X70/16	10	3.4	1.8	25	780	0.40	0.28	214	205
1X95/16	11.4	3.4	1.8	26	846	0.39	0.31	255	252
1X120/16	12.8	3.4	1.8	28	984	0.37	0.34	286	290
1X150/25	14.4	3.4	1.9	30	1210	0.36	0.37	316	330
1X185/25	16	3.4	2.0	32	1330	0.35	0.40	355	375
1X240/25	18.5	3.4	2.1	34	1580	0.33	0.45	404	444
1X300/25	20.6	3.4	2.1	37	1850	0.32	0.49	460	506
1X400/35	23.4	3.4	2.2	40	2240	0.31	0.55	510	587
1X500/35	26.6	3.4	2.3	43	2870	0.30	0.61	604	690

**NA2XSY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	4.5	1.8	22	610	0.47	0.16	126	114
1X35/16	6.9	4.5	1.8	23.5	665	0.45	0.18	147	135
1X50/16	8.2	4.5	1.8	25	740	0.42	0.20	174	164
1X70/16	10	4.5	1.8	26.5	840	0.40	0.23	214	205
1X95/16	11.4	4.5	1.8	28	940	0.38	0.25	255	252
1X120/16	12.8	4.5	1.9	30	1084	0.37	0.28	286	290
1X150/25	14.4	4.5	1.9	32.5	1290	0.36	0.30	316	330
1X185/25	16	4.5	2	34	1450	0.35	0.32	355	375
1X240/25	18.5	4.5	2.1	36.5	1700	0.33	0.36	404	444
1X300/25	20.6	4.5	2.1	39.5	1970	0.32	0.41	460	506
1X400/35	23.4	4.5	2.3	42	2460	0.30	0.45	510	587
1X500/35	26.6	4.5	2.4	45	2960	0.28	0.49	604	690

## NA2XSY , 12/20(24) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X35/16	6.9	5.5	1.8	25.5	746	0.47	0.16	147	135
1X50/16	8.2	5.5	1.8	27	810	0.46	0.17	174	164
1X70/16	10	5.5	1.9	29	940	0.43	0.19	214	205
1X95/16	11.4	5.5	1.9	30.5	1050	0.41	0.21	255	252
1X120/16	12.8	5.5	2	32	1182	0.40	0.23	286	290
1X150/25	14.4	5.5	2.1	35	1415	0.38	0.25	316	330
1X185/25	16	5.5	2.1	36.5	1590	0.37	0.27	355	375
1X240/25	18.5	5.5	2.2	39	1800	0.36	0.30	404	444
1X300/25	20.6	5.5	2.3	42	2130	0.35	0.32	460	506
1X400/35	23.4	5.5	2.4	44.5	2570	0.33	0.36	510	587
1X500/35	26.6	5.5	2.5	48	3100	0.32	0.40	604	690

## NA2XSY , 18/30(36) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X50/16	8.2	8	2	33	1220	0.49	0.13	174	164
1X70/16	10	8	2.1	35	1290	0.46	0.15	214	205
1X95/16	11.4	8	2.1	36	1330	0.44	0.16	255	252
1X120/16	12.8	8	2.2	38	1482	0.43	0.17	286	290
1X150/25	14.4	8	2.2	40	1620	0.41	0.19	316	330
1X185/25	16	8	2.3	42	1760	0.40	0.20	355	375
1X240/25	18.5	8	2.4	44	2040	0.38	0.22	404	444
1X300/25	20.6	8	2.5	47	2170	0.37	0.24	460	506
1X400/35	23.4	8	2.6	50	2860	0.35	0.27	510	587
1X500/35	26.6	8	2.7	53	3300	0.34	0.29	604	690



### NA2XSY , 38/66(72)Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X95/16	11.4	13	2.6	49.4	2300	0.51	0.11	255	252
1X120/16	12.8	13	2.6	51	2440	0.45	0.13	286	290
1X150/25	14.4	12	2.5	54	2740	0.44	0.14	316	330
1X185/25	16	12	2.5	55.6	2940	0.42	0.15	355	375
1X240/25	18.5	11	2.5	56	3060	0.40	0.17	404	444
1X300/25	20.6	11	2.6	58.4	3350	0.36	0.19	460	506
1X400/35	23.4	10.5	2.7	62	3780	0.37	0.21	510	587
1X500/50	26.6	10.5	2.7	63.4	4080	0.36	0.23	604	690
1X630/50	29.4	10.5	2.9	66.8	4670	0.34	0.26	710	812



XLPE INSULATED, PVC SHEATHED, MULTI CORE



NA2X5EY

**Application :** For electricity in public network and industrial plants.

For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2

**Construction :**

- 1- Conductor : Aluminum, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically over each core
- 6-inner covering : Extruded polyvinyl chloride pvc, filling interstices
- 7- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6-Min. bending radius : 15 x cable-Ø

### NA2X5EY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	2.5	2.0	34	1450	0.40	0.25	102	86
3X35/16	6.9	2.5	2.2	37	1710	0.39	0.28	122	102
3X50/16	8.2	2.5	2.4	45	2000	0.38	0.29	145	122
3X70/16	10	2.5	2.5	49	2450	0.35	0.35	180	155
3X95/16	11.4	2.5	2.6	52	2980	0.32	0.36	214	188
3X120/16	12.8	2.5	2.7	55	3520	0.31	0.37	244	215
3X150/25	14.4	2.5	2.9	60	4070	0.30	0.42	274	246
3X185/25	16	2.5	3	64	4630	0.29	0.47	310	285
3X240/25	18.5	2.6	3.2	70	5820	0.28	0.52	362	338
3X300/25	20.6	2.8	3.4	76	7120	0.27	0.57	410	386
3X400/35	23.4	3	3.7	83	7880	0.26	0.65	470	452



## NA2XSEY , 6/10(12) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	3.4	2.3	38.5	1810	0.44	0.21	102	86
3X35/16	6.9	3.4	2.4	43	2060	0.42	0.22	122	102
3X50/16	8.2	3.4	2.5	49	2460	0.41	0.24	145	122
3X70/16	10	3.4	2.7	53	2840	0.38	0.28	180	155
3X95/16	11.4	3.4	2.8	56	3420	0.37	0.31	214	188
3X120/16	12.8	3.4	2.9	60	3980	0.35	0.34	244	215
3X150/25	14.4	3.4	3.0	64	4540	0.34	0.37	274	246
3X185/25	16	3.4	3.2	68	5070	0.33	0.40	310	285
3X240/25	18.5	3.4	3.4	74	6260	0.31	0.45	362	338
3X300/25	20.6	3.4	3.5	79	7610	0.30	0.49	410	386
3X400/35	23.4	3.4	3.7	85	8680	0.29	0.55	470	452

## NA2XSEY , 8.7/15(17.5) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	4.5	2.3	43	2230	0.42	0.16	102	86
3X35/16	6.9	4.5	2.4	46	2550	0.40	0.18	122	102
3X50/16	8.2	4.5	2.5	51	2860	0.38	0.20	145	122
3X70/16	10	4.5	2.6	54	3360	0.35	0.23	180	155
3X95/16	11.4	4.5	2.8	59	4000	0.34	0.25	214	188
3X120/16	12.8	4.5	2.9	63	4620	0.32	0.28	244	215
3X150/25	14.4	4.5	3.0	67	2220	0.31	0.30	274	246
3X185/25	16	4.5	3.1	71	5850	0.30	0.32	310	285
3X240/25	18.5	4.5	3.3	77	7020	0.29	0.36	362	338
3X300/25	20.6	4.5	3.4	84	8370	0.28	0.41	410	386
3X400/35	23.4	4.5	3.6	89	9380	0.27	0.43	470	452

## NA2XSEY , 12/20(24) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X35/16	6.9	5.5	2.6	50	3020	0.45	0.16	122	102
3X50/16	8.2	5.5	2.9	54.5	3790	0.44	0.17	145	122
3X70/16	10	5.5	3	57.5	4350	0.41	0.19	180	155
3X95/16	11.4	5.5	3.1	62	4730	0.39	0.21	214	188
3X120/16	12.8	5.5	3.2	67	5220	0.38	0.23	244	215
3X150/25	14.4	5.5	3.4	70	6265	0.36	0.25	274	246
3X185/25	16	5.5	3.5	75	7000	0.35	0.27	310	285
3X240/25	18.5	5.5	3.7	79	7800	0.34	0.30	362	338
3X300/25	20.6	5.5	3.8	87	9070	0.33	0.32	410	386
3X400/35	23.4	5.5	4	94	10840	0.31	0.36	470	452

## NA2XSEY , 18/30(36) Kv

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X50/16	8.2	8	3.2	71	5850	0.47	0.13	145	122
3X70/16	10	8	3.4	75	6270	0.44	0.15	180	155
3X95/16	11.4	8	3.5	78	7080	0.42	0.16	214	188
3X120/16	12.8	8	3.6	81	7740	0.41	0.17	244	215
3X150/25	14.4	8	3.7	86	8740	0.39	0.19	274	246
3X185/25	16	8	3.9	90	9570	0.38	0.20	310	285
3X240/25	18.5	8	4.1	96	10900	0.36	0.22	362	338
3X300/25	20.6	8	4.2	100	12810	0.35	0.24	410	386
3X400/35	23.4	8	4.4	107	14480	0.32	0.27	470	452



▶ XLPE INSULATED, ARMOUR, PVC SHEATHED, SINGLE CORE



### NA2XSRY

**Application :** For electricity in public network and industrial plants.  
For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2 , IEC 60840

**Construction :**

- 1- Conductor : Aluminum, class 2 acc. to IEC 60228, circular compacted (RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation : Cross-linked polyethylene -XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen : copper wire and copper tape applied helically
- 6- Wrapping : at least 1 layer of plastic tape
- 7- Bedding : Extruded polyvinyl chloride -PVC, black
- 8- Armour : Round aluminum wire
- 9- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### NA2XSRY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	2.5	1.6	1.8	24.5	810	0.46	0.26	126	114
1X35/16	6.9	2.5	1.6	1.8	25.5	880	0.44	0.28	147	135
1X50/16	8.2	2.5	1.6	1.8	27	970	0.40	0.29	174	164
1X70/16	10	2.5	1.6	1.9	29	1110	0.37	0.35	214	205
1X95/16	11.4	2.5	1.6	1.9	30	1196	0.34	0.36	255	252
1X120/16	12.8	2.5	1.6	2	32	1342	0.33	0.37	286	290
1X150/25	14.4	2.5	2	2.1	35	1685	0.32	0.42	316	330
1X185/25	16	2.5	2	2.1	37	1840	0.31	0.47	355	375
1X240/25	18.5	2.6	2	2.2	39	2150	0.30	0.52	404	444
1X300/25	20.6	2.8	2	2.3	42	2530	0.29	0.57	460	506
1X400/35	23.4	3	2.5	2.5	47	3340	0.28	0.65	510	587
1X500/35	26.6	3.2	2.5	2.6	51	3880	0.26	0.69	604	690

**NA2XSYRY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	3.4	1.6	1.8	26.5	880	0.50	0.19	126	114
1X35/16	6.9	3.4	1.6	1.9	27.5	960	0.48	0.22	147	135
1X50/16	8.2	3.4	1.6	1.9	29	1080	0.43	0.24	174	164
1X70/16	10	3.4	1.6	1.9	31	1240	0.40	0.28	214	205
1X95/16	11.4	3.4	1.6	2	32	1430	0.39	0.31	255	252
1X120/16	12.8	3.4	1.6	2.1	35	1530	0.37	0.34	286	290
1X150/25	14.4	3.4	2	2.1	37	1810	0.36	0.37	316	330
1X185/25	16	3.4	2	2.2	39	2060	0.35	0.40	355	375
1X240/25	18.5	3.4	2	2.3	41	2280	0.33	0.45	404	444
1X300/25	20.6	3.4	2	2.4	44	2690	0.32	0.49	460	506
1X400/35	23.4	3.4	2.5	2.5	48	3510	0.31	0.55	510	587
1X500/35	26.6	3.4	2.5	2.6	51	4500	0.30	0.61	604	690

**NA2XSYRY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	4.5	1.6	1.9	28.5	1030	0.52	0.16	126	114
1X35/16	6.9	4.5	1.6	1.9	29.5	1090	0.49	0.18	147	135
1X50/16	8.2	4.5	1.6	1.9	32	1200	0.46	0.21	174	164
1X70/16	10	4.5	1.6	2	34	1400	0.44	0.23	214	205
1X95/16	11.4	4.5	2	2.1	36	1580	0.43	0.25	255	252
1X120/16	12.8	4.5	2	2.1	38	1740	0.41	0.27	286	290
1X150/25	14.4	4.5	2	2.2	40	1915	0.40	0.29	316	330
1X185/25	16	4.5	2	2.2	41	2120	0.39	0.32	355	375
1X240/25	18.5	4.5	2	2.3	44	2380	0.37	0.35	404	444
1X300/25	20.6	4.5	2.5	2.4	47	2890	0.36	0.39	460	506
1X400/35	23.4	4.5	2.5	2.5	50	3560	0.35	0.43	510	587
1X500/35	26.6	4.5	2.5	2.6	54	4680	0.34	0.48	604	690

**NA2XSYRY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X35/16	6.9	5.5	2	2	32.5	1280	0.50	0.16	147	135
1X50/16	8.2	5.5	2	2.1	34	1480	0.46	0.17	174	164
1X70/16	10	5.5	2	2.1	36	1640	0.43	0.19	214	205
1X95/16	11.4	5.5	2	2.2	38	1720	0.41	0.21	255	252
1X120/16	12.8	5.5	2	2.2	39	1950	0.40	0.23	286	290
1X150/25	14.4	5.5	2	2.3	41	2040	0.38	0.25	316	330
1X185/25	16	5.5	2	2.3	43	2400	0.37	0.27	355	375
1X240/25	18.5	5.5	2.5	2.5	47	2860	0.36	0.30	404	444
1X300/25	20.6	5.5	2.5	2.5	49	3140	0.35	0.32	460	506
1X400/35	23.4	5.5	2.5	2.6	52	3820	0.33	0.36	510	587
1X500/35	26.6	5.5	2.5	2.8	56	4920	0.32	0.40	604	690

**NA2XSYRY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X50/16	8.2	8	2	2.2	40	1770	0.49	0.13	174	164
1X70/16	10	8	2	2.3	42	1890	0.46	0.15	214	205
1X95/16	11.4	8	2	2.3	43	2070	0.44	0.16	255	252
1X120/16	12.8	8	2.5	2.4	46	2230	0.43	0.17	286	290
1X150/25	14.4	8	2.5	2.5	48	2300	0.41	0.19	316	330
1X185/25	16	8	2.5	2.6	50	2540	0.40	0.20	355	375
1X240/25	18.5	8	2.5	2.7	53	3220	0.38	0.22	404	444
1X300/25	20.6	8	2.5	2.7	55	3520	0.37	0.24	460	506
1X400/35	23.4	8	2.5	2.8	58	4210	0.35	0.27	510	587
1X500/35	26.6	8	2.5	2.9	62	5100	0.34	0.29	604	690

## NA2XSYRY , 38/66(72) Kv

SIZE	Conductor diameter	Insulation thickness	Aluminum wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X95/16	11.4	13	2.5	2.7	59	3540	0.51	0.11	255	252
1X120/16	12.8	13	2.5	2.8	60	3750	0.45	0.13	286	290
1X150/25	14.4	12	2.5	2.8	61	3890	0.44	0.14	316	330
1X185/25	16	12	2.5	2.9	62	4140	0.42	0.15	355	375
1X240/25	18.5	11	2.5	3.0	65	4180	0.40	0.17	404	444
1X300/25	20.6	11	2.5	3.1	67	4650	0.38	0.19	460	506
1X400/35	23.4	10.5	2.5	3.2	71	5340	0.37	0.21	510	587
1X500/50	26.6	10.5	2.5	3.3	74	5800	0.36	0.23	604	690
1X630/50	29.4	10.5	3.15	3.5	82	6360	0.34	0.26	710	812

▶ XLPE INSULATED, ARMOUR, PVC SHEATHED, SINGLE CORE



### NA2XSYBY

**Application :** For electricity in public network and industrial plants.  
For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2 , IEC 60840

**Construction :**

- 1- Conductor : Aluminum, class 2 acc. to IEC 60228, circular compacted (RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation : Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen : copper wire and copper tape applied helically
- 6- Wrapping : at least 1 layer of plastic tape
- 7- Bedding : Extruded polyvinyl chloride –PVC, black
- 8- Armour : Double aluminum tape
- 9- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### NA2XSYBY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	2.5	0.5	1.8	24	700	0.46	0.26	126	114
1X35/16	6.9	2.5	0.5	1.8	25	770	0.44	0.28	147	135
1X50/16	8.2	2.5	0.5	1.8	26	830	0.40	0.29	174	164
1X70/16	10	2.5	0.5	1.8	27	920	0.37	0.35	214	205
1X95/16	11.4	2.5	0.5	1.9	29	1046	0.34	0.36	255	252
1X120/16	12.8	2.5	0.5	1.9	31	1180	0.33	0.37	286	290
1X150/25	14.4	2.5	0.5	2	33	1395	0.32	0.42	316	330
1X185/25	16	2.5	0.5	2.1	35	1580	0.31	0.47	355	375
1X240/25	18.5	2.6	0.5	2.2	37	1850	0.30	0.52	404	444
1X300/25	20.6	2.8	0.5	2.2	40	2120	0.29	0.57	460	506
1X400/35	23.4	3	0.5	2.4	44	2560	0.28	0.65	510	587
1X500/35	26.6	3.2	0.5	2.5	48	2800	0.26	0.69	604	690

**NA2XSYBY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	3.4	0.5	1.8	25.5	790	0.50	0.19	126	114
1X35/16	6.9	3.4	0.5	1.8	26.5	940	0.48	0.22	147	135
1X50/16	8.2	3.4	0.5	1.8	28	990	0.43	0.24	174	164
1X70/16	10	3.4	0.5	1.9	30	1140	0.40	0.28	214	205
1X95/16	11.4	3.4	0.5	1.9	31	1246	0.39	0.31	255	252
1X120/16	12.8	3.4	0.5	2	33	1460	0.37	0.34	286	290
1X150/25	14.4	3.4	0.5	2.1	35	1730	0.36	0.37	316	330
1X185/25	16	3.4	0.5	2.1	37	1950	0.35	0.40	355	375
1X240/25	18.5	3.4	0.5	2.2	39	1960	0.33	0.45	404	444
1X300/25	20.6	3.4	0.5	2.3	41	2210	0.32	0.49	460	506
1X400/35	23.4	3.4	0.5	2.4	45	2660	0.31	0.55	510	587
1X500/35	26.6	3.4	0.5	2.5	48	3180	0.30	0.61	604	690

**NA2XSYBY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X25/16	5.8	4.5	0.5	1.8	27	980	0.48	0.19	126	114
1X35/16	6.9	4.5	0.5	1.8	28	1050	0.48	0.20	147	135
1X50/16	8.2	4.5	0.5	1.9	30	1140	0.46	0.21	174	164
1X70/16	10	4.5	0.5	1.9	31.5	1260	0.44	0.23	214	205
1X95/16	11.4	4.5	0.5	2	33	1426	0.43	0.25	255	252
1X120/16	12.8	4.5	0.5	2	35	1542	0.41	0.27	286	290
1X150/25	14.4	4.5	0.5	2.1	37	1785	0.40	0.29	316	330
1X185/25	16	4.5	0.5	2.1	39	2070	0.39	0.32	355	375
1X240/25	18.5	4.5	0.5	2.2	41	2260	0.37	0.35	404	444
1X300/25	20.6	4.5	0.5	2.3	43	2570	0.36	0.39	460	506
1X400/35	23.4	4.5	0.5	2.4	46	3040	0.35	0.43	510	587
1X500/35	26.6	4.5	0.5	2.5	50	3560	0.34	0.48	604	690

**NA2XSYBY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X35/16	6.9	5.5	0.5	1.9	30.5	1140	0.50	0.16	147	135
1X50/16	8.2	5.5	0.5	2	32	1260	0.46	0.17	174	164
1X70/16	10	5.5	0.5	2	34	1390	0.43	0.19	214	205
1X95/16	11.4	5.5	0.5	2.1	35	1546	0.41	0.21	255	252
1X120/16	12.8	5.5	0.5	2.1	37	1720	0.40	0.23	286	290
1X150/25	14.4	5.5	0.5	2.2	39	1865	0.38	0.25	316	330
1X185/25	16	5.5	0.5	2.3	41	2130	0.37	0.27	355	375
1X240/25	18.5	5.5	0.5	2.4	44	2380	0.36	0.30	404	444
1X300/25	20.6	5.5	0.5	2.4	46	2620	0.35	0.32	460	506
1X400/35	23.4	5.5	0.5	2.5	49	3480	0.33	0.36	510	587
1X500/35	26.6	5.5	0.5	2.7	53	4100	0.32	0.40	604	690

**NA2XSYBY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X50/16	8.2	8	0.5	2.2	38	1510	0.49	0.13	174	164
1X70/16	10	8	0.5	2.2	39	1660	0.46	0.15	214	205
1X95/16	11.4	8	0.5	2.3	41	1716	0.44	0.16	255	252
1X120/16	12.8	8	0.5	2.4	43	1830	0.43	0.17	286	290
1X150/25	14.4	8	0.5	2.4	45	2265	0.41	0.19	316	330
1X185/25	16	8	0.5	2.5	47	2440	0.40	0.20	355	375
1X240/25	18.5	8	0.5	2.5	49	2690	0.38	0.22	404	444
1X300/25	20.6	8	0.5	2.6	52	3000	0.37	0.24	460	506
1X400/35	23.4	8	0.5	2.8	55	3810	0.35	0.27	510	587
1X500/35	26.6	8	0.5	3.0	58	4360	0.34	0.29	604	690



**NA2XSYBY , 38/66(72) Kv**

SIZE	Conductor diameter	Insulation thickness	Aluminum Tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
1X95/16	11.4	13	0.5	2.6	56	3326	0.51	0.11	255	252
1X120/16	12.8	13	0.5	2.7	57	3570	0.45	0.13	286	290
1X150/25	14.4	12	0.5	2.7	58	3685	0.44	0.14	316	330
1X185/25	16	12	0.5	2.8	59	3930	0.42	0.15	355	375
1X240/25	18.5	11	0.5	2.9	62	4060	0.40	0.17	404	444
1X300/25	20.6	11	0.5	3.0	64	4430	0.38	0.19	460	506
1X400/35	23.4	10.5	0.5	3.1	67	5110	0.37	0.21	510	587
1X500/50	26.6	10.5	0.5	3.3	71	5580	0.36	0.23	604	690
1X630/50	29.4	10.5	0.5	3.4	76	6140	0.34	0.26	710	812

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▶ XLPE INSULATED, ARMOUR, PVC SHEATHED, MULTI CORE



### NA2XSEYRY

**Application :** For electricity in public network and industrial plants.  
For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2

**Construction :**

- 1 Conductor : Aluminum, class 2 acc. to IEC 60228, circular compacted (RM)
- 2 Semi-conducting : screen of semi-conducting compound
- 3 Insulation : Cross-linked polyethylene –XLPE
- 4 Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5 Metallic screen : copper wire and copper tape applied helically over each core
- 6 Bedding : Extruded polyvinyl chloride –PVC, black
- 7 Armour : Round steel wire
- 8 Wrapping : at least 1 layer of plastic tape
- 9 Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### NA2XSEYRY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	2.5	2	2.3	41.5	2950	0.42	0.25	102	86
3X35/16	6.9	2.5	2.5	2.4	46	3690	0.40	0.27	122	102
3X50/16	8.2	2.5	2.5	2.6	50	4510	0.38	0.29	145	122
3X70/16	10	2.5	2.5	2.7	54	5190	0.35	0.35	180	155
3X95/16	11.4	2.5	2.5	2.8	57	5690	0.32	0.36	214	188
3X120/16	12.8	2.5	2.5	2.9	61	6450	0.31	0.37	244	215
3X150/25	14.4	2.5	2.5	3.1	66	7345	0.30	0.42	274	246
3X185/25	16	2.5	2.5	3.2	72	8140	0.29	0.47	310	285
3X240/25	18.5	2.6	3.15	3.4	76	10120	0.28	0.52	362	338
3X300/25	20.6	2.8	3.15	3.6	83	12160	0.27	0.57	410	386
3X400/35	23.4	3	3.15	3.7	89	14830	0.26	0.65	470	452



**NA2XSEYRY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	3.4	2.5	2.5	46.5	3500	0.45	0.20	102	86
3X35/16	6.9	3.4	2.5	2.6	51	4270	0.43	0.22	122	102
3X50/16	8.2	3.4	2.5	2.7	55	5080	0.41	0.24	145	122
3X70/16	10	3.4	2.5	2.8	58	6420	0.38	0.28	180	155
3X95/16	11.4	3.4	2.5	2.9	62	7090	0.37	0.31	214	188
3X120/16	12.8	3.4	2.5	3.1	65	7296	0.35	0.34	244	215
3X150/25	14.4	3.4	2.5	3.2	70	8145	0.34	0.37	274	246
3X185/25	16	3.4	3.15	3.4	75	9420	0.33	0.40	310	285
3X240/25	18.5	3.4	3.15	3.6	81	10720	0.31	0.45	362	338
3X300/25	20.6	3.4	3.15	3.7	87	12810	0.30	0.49	410	386
3X400/35	23.4	3.4	3.15	4	94	15380	0.29	0.55	470	452

**NA2XSEYRY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	4.5	2.5	2.6	52.5	3800	0.42	0.19	102	86
3X35/16	6.9	4.5	2.5	2.7	56	4670	0.40	0.20	122	102
3X50/16	8.2	4.5	2.5	2.8	60	5450	0.38	0.21	145	122
3X70/16	10	4.5	2.5	2.9	64	7170	0.37	0.23	180	155
3X95/16	11.4	4.5	2.5	3.1	69	7530	0.36	0.25	214	188
3X120/16	12.8	4.5	2.5	3.2	71	8260	0.35	0.27	244	215
3X150/25	14.4	4.5	3.15	3.4	77	9445	0.34	0.29	274	246
3X185/25	16	4.5	3.15	3.5	83	10070	0.33	0.32	310	285
3X240/25	18.5	4.5	3.15	3.7	88	11370	0.32	0.35	362	338
3X300/25	20.6	4.5	3.15	3.8	94	13410	0.31	0.39	410	386
3X400/35	23.4	4.5	3.15	4.0	101	15930	0.29	0.42	470	452

**NA2XSEYRY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X35/16	6.9	5.5	2.5	2.9	60	5620	0.46	0.16	122	102
3X50/16	8.2	5.5	2.5	3.0	64	6250	0.44	0.17	145	122
3X70/16	10	5.5	2.5	3.2	68	7320	0.41	0.19	180	155
3X95/16	11.4	5.5	2.5	3.3	71	7740	0.39	0.21	214	188
3X120/16	12.8	5.5	3.15	3.4	76	9296	0.38	0.23	244	215
3X150/25	14.4	5.5	3.15	3.6	81	10495	0.36	0.25	274	246
3X185/25	16	5.5	3.15	3.7	86	11510	0.35	0.27	310	285
3X240/25	18.5	5.5	3.15	4.0	92	12320	0.34	0.30	362	338
3X300/25	20.6	5.5	3.15	4.1	97	14710	0.33	0.32	410	386
3X400/35	23.4	5.5	3.15	4.3	106	15930	0.33	0.36	470	452

**NA2XSEYRY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel wire diameter (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X50/16	8.2	8	3.15	3.5	77	8950	0.47	0.13	145	122
3X70/16	10	8	3.15	3.6	81	10070	0.44	0.15	180	155
3X95/16	11.4	8	3.15	3.7	84	11080	0.42	0.16	214	188
3X120/16	12.8	8	3.15	3.8	88	12546	0.41	0.17	244	215
3X150/25	14.4	8	3.15	4	94	13845	0.39	0.19	274	246
3X185/25	16	8	3.15	4.1	99	15170	0.38	0.20	310	285
3X240/25	18.5	8	3.15	4.2	104	16720	0.36	0.22	362	338
3X300/25	20.6	8	3.15	4.4	109	18510	0.35	0.24	410	386
3X400/35	23.4	8	3.15	4.7	118	20780	0.32	0.27	470	452



XLPE INSULATED, ARMOUR, PVC SHEATHED, MULTI CORE



### NA2XSEYBY

**Application :** For electricity in public network and industrial plants.  
For indoor and outdoor installation in dry and wet location, on racks, in conduits, for direct burial.

**Specification :** IEC 60502-2

**Construction :**

- 1- Conductor : Aluminum, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene –XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically over each core
- 6- Bedding : Extruded polyvinyl chloride –PVC, black
- 7- Armour : Double steel tape
- 8- Wrapping : at least 1 layer of plastic tape
- 9- Outer sheath : Extruded polyvinyl chloride -PVC  
colour is red, other colour on request.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (5 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes
- 5- Flame retardant : Acc. IEC 60332-1
- 6- Min. bending radius : 15 x cable-Ø

### NA2XSEYBY , 3.6/6(7.2) Kv

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	2.5	0.5	2.3	40	2300	0.42	0.27	102	86
3X35/16	6.9	2.5	0.5	2.4	44	2690	0.40	0.28	122	102
3X50/16	8.2	2.5	0.5	2.5	47	3330	0.38	0.29	145	122
3X70/16	10	2.5	0.5	2.6	51	3770	0.35	0.35	180	155
3X95/16	11.4	2.5	0.5	2.7	54	4260	0.32	0.36	214	188
3X120/16	12.8	2.5	0.5	2.8	58	4736	0.31	0.37	244	215
3X150/25	14.4	2.5	0.5	3	62	5495	0.30	0.42	274	246
3X185/25	16	2.5	0.5	3.1	66	6290	0.29	0.47	310	285
3X240/25	18.5	2.6	0.5	3.3	72	7580	0.28	0.52	362	338
3X300/25	20.6	2.8	0.5	3.5	78	10310	0.27	0.57	410	386
3X400/35	23.4	3.0	0.5	3.8	87	12180	0.26	0.65	470	452

**NA2XSEYBY , 6/10(12) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	3.4	0.5	2.4	44.5	2870	0.45	0.20	102	86
3X35/16	6.9	3.4	0.5	2.5	47.4	3270	0.43	0.22	122	102
3X50/16	8.2	3.4	0.5	2.6	51	4210	0.41	0.24	145	122
3X70/16	10	3.4	0.5	2.7	55	4630	0.38	0.28	180	155
3X95/16	11.4	3.4	0.5	2.8	58	5290	0.37	0.31	214	188
3X120/16	12.8	3.4	0.5	3	62	5866	0.35	0.34	244	215
3X150/25	14.4	3.4	0.5	3.1	66	6065	0.34	0.37	274	246
3X185/25	16	3.4	0.5	3.2	70	7770	0.33	0.40	310	285
3X240/25	18.5	3.4	0.5	3.4	76	10120	0.31	0.45	362	338
3X300/25	20.6	3.4	0.8	3.6	82	11620	0.30	0.49	410	386
3X400/35	23.4	3.4	0.8	3.8	89	13430	0.29	0.55	470	452

**NA2XSEYBY , 8.7/15(17.5) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X25/16	5.8	4.5	0.5	2.5	50	3250	0.42	0.17	102	86
3X35/16	6.9	4.5	0.5	2.6	54	3820	0.40	0.19	122	102
3X50/16	8.2	4.5	0.5	2.7	58	4900	0.38	0.21	145	122
3X70/16	10	4.5	0.5	2.8	62	5220	0.37	0.23	180	155
3X95/16	11.4	4.5	0.5	3.0	66	6040	0.36	0.25	214	188
3X120/16	12.8	4.5	0.5	3.1	69	6700	0.35	0.27	244	215
3X150/25	14.4	4.5	0.5	3.2	74	6965	0.34	0.29	274	246
3X185/25	16	4.5	0.8	3.3	80	9070	0.33	0.32	310	285
3X240/25	18.5	4.5	0.8	3.5	84	11220	0.32	0.35	362	338
3X300/25	20.6	4.5	0.8	3.7	88	12870	0.31	0.39	410	386
3X400/35	23.4	4.5	0.8	3.9	96	14520	0.29	0.42	470	452

**NA2XSEYBY , 12/20(24) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	µF/km	A	A
3X35/16	6.9	5.5	0.5	2.7	57	4120	0.46	0.16	122	102
3X50/16	8.2	5.5	0.5	2.8	61	5200	0.44	0.17	145	122
3X70/16	10	5.5	0.5	3.0	65	5620	0.41	0.19	180	155
3X95/16	11.4	5.5	0.5	3.2	68	6400	0.39	0.21	214	188
3X120/16	12.8	5.5	0.5	3.3	72	7146	0.38	0.23	244	215
3X150/25	14.4	5.5	0.5	3.4	76	7695	0.36	0.25	274	246
3X185/25	16	5.5	0.8	3.5	83	9770	0.35	0.27	310	285
3X240/25	18.5	5.5	0.8	3.7	87	11000	0.34	0.30	362	338
3X300/25	20.6	5.5	0.8	3.9	92	13160	0.33	0.32	410	386
3X400/35	23.4	5.5	0.8	4.1	100	14730	0.33	0.36	470	452

**NA2XSEYBY , 18/30(36) Kv**

SIZE	Conductor diameter	Insulation thickness	Steel tape thickness (armour)	Sheath thickness	Approx. Overall diameter	Approx. weight	inductance	Capacitance	Current rating in ground At 20°C	Current rating in air At 30°C
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/km	mH/km	F/kmµ	A	A
3X50/16	8.2	8	0.5	3.3	73	6550	0.47	0.13	145	122
3X70/16	10	8	0.5	3.4	77	7770	0.44	0.15	180	155
3X95/16	11.4	8	0.8	3.6	81	8580	0.42	0.16	214	188
3X120/16	12.8	8	0.8	3.7	85	9346	0.41	0.17	244	215
3X150/25	14.4	8	0.8	3.9	89	9655	0.39	0.19	274	246
3X185/25	16	8	0.8	4.0	93	11070	0.38	0.20	310	285
3X240/25	18.5	8	0.8	4.2	99	12620	0.36	0.22	362	338
3X300/25	20.6	8	0.8	4.3	104	14800	0.35	0.24	410	386
3X400/35	23.4	8	0.8	4.5	110	17780	0.32	0.27	470	452

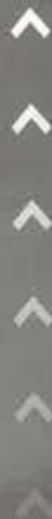
Part 3

Medium voltage Aerial Bundled Cables

(With Aluminum Conductor)

(12/20)24 KV - (19/33)35 KV

▶ AL/SC/XLPE/SC/SCT/ICWS/PE - NA2X5E2Y-T





## MEDIUM VOLTAGE AERIAL BUNDLED CABLES



## NA2X5E2Y-T

**Application :** For electricity in aerial network and industrial plants.

**Specification :** IEC 60502-2 , AS/NZS 3599-1

**Construction :**

- 1- Conductor : Aluminum, class2 acc. to IEC 60228, circular compacted(RM)
- 2- Semi-conducting : screen of semi-conducting compound
- 3- Insulation: Cross-linked polyethylene -XLPE
- 4- Semi-conducting : screen of semi-conducting compound plus semi-conducting tape
- 5- Metallic screen: copper wire and copper tape applied helically over each core
- 6- Outer sheath : Extruded polyethylene -HDPE , colour is black.

**Technical data :**

- 1- Temperature : -30°C to +90°C
- 2- Maximum short circuit temperature : 250°C (1 seconds Max.)
- 3- Conductor resistance : As per class 2 of IEC 60228
- 4- Test voltage : 3.5 U<sub>0</sub> for 5 minutes

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Elec. Resistance max.	inductance	Reactance	Capacitance	Current in rating air	
										°C30	°C40
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	Ω/km	mH/km	Ω/km	μF/km	A	A
3x(1x35/16)-25	6.9	5.5	1.8	65	2350	0.865	0.461	0.166	0.175	170	150
3x(1x70/16)-50	9.7	5.5	1.9	72	2990	0.443	0.435	0.148	0.207	260	230
3x(1x120/16)-70	12.9	5.5	2.0	77	3750	0.253	0.399	0.135	0.255	360	320
3x(1x150/25)-70	14.3	5.5	2.0	83	4340	0.206	0.385	0.133	0.267	410	365

SIZE	Conductor diameter	Insulation thickness	Sheath thickness	Approx. Overall diameter	Approx. weight	Elec. Resistance max.	inductance	Reactance	Capacitance	Current in rating air	
										°C30	°C40
mm <sup>2</sup>	mm	mm	mm	mm	Kg/km	Ω/km	mH/km	Ω/km	μF/km	A	A
3x(1x35/16)-25	6.9	8.0	2.0	78	3010	0.868	0.461	0.166	0.135	170	150
3x(1x70/16)-50	9.7	8.0	2.0	81	3690	0.443	0.435	0.148	0.159	260	230
3x(1x120/16)-70	12.9	8.0	2.1	84	4520	0.253	0.399	0.135	0.188	360	320
3x(1x150/25)-70	14.3	8.0	2.2	94	5180	0.206	0.385	0.131	0.201	410	365



Part 4

Technical information



▶ CONDUCTOR RESISTANCE VALUE ACCORDING TO CROSS-SECTION

at 20°C VDE 0295 or IEC 60228

Table 1

CONDUCTOR DIMENSION	POWER CABLES AND WIRES				WELDING CABLES			
	Cu conductor				Al conductor		Cu conductor	
	Tinned Cu wire		Plain Cu Wire		Plain Al wire		Plain Wire	Tinned Wire
Cross-section mm	Class 1 and 2 OHM/km	Class 5 and 6 OHM/km	Class 1 and 2 OHM/km	Class 5 and 6 OHM/km	Class 1 OHM/km	Class 2 OHM/km	OHM/km	OHM/km
0,05		~380,0	-	~360,0	-	-	-	-
0,08		~240,0	-	~230,0	-	-	-	-
0,09		~230,0	-	~215,0	-	-	-	-
0,14		~140,0	-	~138,0	-	-	-	-
0,22		~96,8	-	~95,0	-	-	-	-
0,25		~79,3	-	~77,8	-	-	-	-
0,34		~57,1	-	~56,0	-	-	-	-
0,5	36,7	40,1	36,0	39,0	-	-	-	-
0,75	24,8	26,7	24,5	26,0	-	-	-	-
1,0	18,2	20,0	18,1	19,5	-	-	-	-
1,5	12,2	13,7	12,1	13,3	-	-	-	-
2,5	7,56	8,21	7,41	7,98	-	-	-	-
4,0	4,70	5,09	4,61	4,95	-	-	-	-
6,0	3,11	3,39	3,08	3,30	-	-	-	-
10,0	1,84	1,95	1,83	1,91	-	-	-	-
16,0	1,16	1,24	1,15	1,21	-	1,91	1,16	1,19
25,0	0,734	0,795	0,727	0,780	1,20	1,20	0,758	0,780
35,0	0,529	0,565	0,524	0,554	0,868	0,868	0,536	0,552
50,0	0,391	0,393	0,387	0,386	0,641	0,641	0,379	0,390
70,0	0,270	0,277	0,268	0,272	0,443	0,443	0,268	0,276
95,0	0,195	0,210	0,193	0,206	0,320	0,320	0,198	0,204
120,0	0,154	0,164	0,153	0,161	0,253	0,253	0,155	0,159
150,0	0,126	0,132	0,124	0,129	0,206	0,206	0,125	0,129
185,0	0,100	0,108	0,099	0,106	0,164	0,164	0,102	0,105
240,0	0,0762	0,0817	0,0754	0,0801	0,125	0,125	-	-
300,0	0,0607	0,0654	0,0601	0,0641	0,100	0,100	-	-
400,0	0,0475	0,0495	0,0470	0,0486	-	0,0778	-	-
500,0	0,369	0,0391	0,0366	0,0384	-	0,0605	-	-
630,0	0,0286	0,0292	0,0283	0,0287	-	0,0469	-	-

Class 1 = for single-wire conductors

Class 2 = for multiply wire conductors

Class 3 = for finally standard wire conductors

Class 1 = for extra standard wire conductors



▶ Charging current (A/Km) for single core XLPE cables

Cross section (mm <sup>2</sup> )	Rated voltage (kv)			
	6	10	20	30
50	0.45	0.50	0.70	0.90
70	0.50	0.60	0.80	1.0
95	0.60	0.70	0.9	1.1
120	0.65	0.70	1.0	1.1
150	0.70	0.80	1.1	1.2
185	0.70	0.80	1.2	1.3
240	0.75	0.90	1.3	1.4
300	0.80	1.0	1.4	1.6
400	0.90	1.2	1.6	1.7
500	1.1	1.3	1.7	1.9
630	1.2	1.4	1.9	2.1
800	1.3	1.6	2.1	2.3
1000	1.5	1.8	2.3	2.5



- ▶ Maximum short circuit current for XLPE insulated cables (0.6/1 - 38/66 kv)  
With copper conductor(KA)

Conductor temperature : 90° C

Cross section (mm <sup>2</sup> )	Short circuit time (Sec)										
	0.1	0.2	0.3	0.4	0.5	1	1.5	2	3	4	5
<b>mm<sup>2</sup></b>	<b>KA</b>										
10	4.52	3.20	2.61	2.26	2.02	1.43	1.17	1.01	0.83	0.72	0.64
16	7.24	5.12	4.18	3.62	3.24	2.29	1.87	1.62	1.32	1.14	1.02
25	11.31	7.99	6.53	5.65	5.06	3.58	2.92	2.53	2.06	1.79	1.60
35	15.83	11.19	9.14	7.91	7.08	5.01	4.09	3.54	3.89	2.50	2.24
50	22.61	15.99	13.05	11.31	10.11	7.15	5.84	5.06	4.13	3.58	3.20
70	31.65	31.65	18.28	15.83	14.16	10.0	8.17	7.08	5.78	5.01	4.48
95	42.96	30.38	24.80	21.48	19.21	13.6	11.09	9.61	7.84	6.79	6.08
120	54.26	38.37	31.33	27.13	24.27	17.2	14.01	12.13	9.91	8.58	7.76
150	67.83	47.96	39.16	33.92	30.33	21.5	17.51	15.17	12.38	10.73	9.59
185	83.66	59.16	48.30	41.83	37.41	26.5	21.60	18.71	15.27	13.23	11.83
240	108.53	76.74	62.66	54.26	48.54	34.3	28.02	24.27	19.81	17.16	15.35
300	135.66	95.93	78.32	67.83	60.67	42.9	35.03	30.33	24.77	21.45	19.19
400	180.88	127.90	104.43	90.44	80.89	57.2	46.70	40.45	33.02	28.60	25.58
500	226.10	159.88	130.54	113.05	101.12	71.5	58.38	50.56	41.28	37.75	31.98
630	284.89	201.45	164.48	142.44	127.41	90.1	73.56	63.70	52.01	45.05	40.29
800	361.76	255.81	208.86	180.88	161.79	114.0	93.41	80.89	66.05	57.20	51.16
1000	452.21	319.76	261.08	226.10	202.23	143.0	116.76	101.12	82.56	71.50	63.95
1200	543.9	384.6	314.0	271.95	242.20	172	140.4	121.6	99.30	86.0	76.90



- ▶ Maximum short circuit current for XLPE insulated cables (0.6/1 – 38/66 kv)  
With aluminum conductor(KA)

Conductor temperature : 90° C

Cross section (mm <sup>2</sup> )	Short circuit time (Sec)										
	0.1	0.2	0.3	0.4	0.5	1	1.5	2	3	4	5
mm <sup>2</sup>	KA										
10	2.97	2.10	1.72	1.49	1.33	0.94	0.77	0.66	0.54	0.47	0.42
16	4.76	3.36	2.75	2.38	2.13	1.50	1.23	1.06	0.87	0.75	0.67
25	7.43	5.25	4.29	3.72	3.32	2.35	1.92	1.66	1.36	1.18	1.05
35	10.40	7.36	6.01	5.20	4.65	3.31	2.69	2.33	1.90	1.65	1.47
50	14.86	10.51	8.58	7.43	6.65	4.72	3.84	3.32	2.71	2.35	2.10
70	20.81	20.81	12.01	10.40	9.31	6.61	5.37	4.65	3.80	3.29	2.94
95	28.24	19.97	16.30	14.12	12.63	8.98	7.29	6.31	5.16	4.47	3.99
120	35.67	25.22	20.59	17.84	15.95	11.3	9.21	7.98	6.51	5.64	5.04
150	44.59	31.53	25.74	22.29	19.94	14.2	11.51	9.97	8.14	7.05	6.31
185	54.99	38.93	31.75	27.50	24.59	17.5	14.20	12.30	10.04	8.70	7.78
240	71.34	50.45	41.19	35.67	31.90	22.7	18.42	15.95	13.03	11.28	10.09
300	89.18	63.06	51.49	44.59	39.88	28.3	23.03	19.94	16.28	14.10	12.61
400	118.90	84.08	68.65	59.45	53.17	37.8	30.70	26.59	21.71	18.80	16.82
500	148.63	105.10	85.81	74.31	66.47	47.2	38.38	33.23	27.14	23.50	21.02
630	187.27	132.42	108.12	93.64	83.75	59.5	48.35	41.87	34.19	29.61	26.48
800	237.80	168.15	137.30	118.90	106.35	75.6	61.40	53.17	43.42	37.60	33.63
1000	297.25	210.19	171.62	148.63	132.94	94.5	76.75	66.47	54.27	47.00	42.04
1200	356.70	252.23	205.94	178.35	159.52	113.0	92.10	79.76	65.13	56.40	50.45



- ▶ Maximum short circuit current ratings for copper screen of Xlpe-insulted cables

Maximum temperature at short circuit : 250°C

Cross section (mm <sup>2</sup> )	Short circuit time (Sec)										
	0.1	0.2	0.3	0.4	0.5	1	1.5	2	3	4	5
mm <sup>2</sup>	KA										
16	10.46	7.40	6.04	5.23	4.68	3.30	2.69	2.33	1.90	1.65	1.47
25	16.12	11.4	9.31	8.06	7.21	5.10	4.16	3.60	2.94	2.55	2.28
35	22.45	15.87	12.96	11.22	10.04	7.10	5.79	5.02	4.09	3.55	3.17
50	33.20	23.48	19.17	16.60	14.85	10.50	8.57	7.42	6.06	5.25	4.70

▶ Engineering technical datum for cable design

### 1. DC conductor resistance

$$R_{dc\theta} = R_{dc20} [1 + \alpha(\theta - 20)] \quad (\Omega/\text{km})$$

$R_{dc20}$  : Resistance at 20°C according to IEC 60228 ( $\Omega/\text{km}$ )

$\alpha$  : Temperature coefficient of resistance per degree at 20° C  
(Copper =  $3.93 \times 10^{-3}$ , Aluminum =  $4.04 \times 10^{-3}$ )

$\theta$  : Temperature ( $^{\circ}\text{C}$ )

### 2. AC conductor resistance

$$R_{AC\theta} = R_{dc\theta} (1 + Y_p + Y_s)(1 + \lambda_1 + \lambda_2) \quad (\Omega/\text{km})$$

$Y_p$  : Proximity effect

$Y_s$  : Skin effect

$\lambda_1$  : Sheath loss

$\lambda_2$  : Armour loss

### 3. Inductance

$$L = K + 0.2 \ln(2S/d) \quad (\text{mH}/\text{km})$$

$K$  : Constant relating to conductor structure

$S$  : Axial cable spacing (  $S = 1.26 \times \text{phase spacing}$  for flat and single core cables) (mm)

$D$  : Conductor diameter (mm)

K	Strands
0	1
0.078	3
0.0642	7
0.0554	19
0.0528	37
0.0514	61 & over



#### 4. Capacitance

$$C = (\epsilon_r / 18 \ln(D/d)) \text{ (}\mu\text{F/km)}$$

$\epsilon_r$  : Dielectric constant (XLPE=2.3)

D : Insulated diameter (mm)

d : Conductor diameter (mm)

#### 5. Reactance

$$X = \omega L 10^{-3} \text{ (}\Omega \text{ /km)}$$

$\omega$  :  $2\pi f$

L : Inductance (mH/km)

#### 6. Impedance

$$Z = \sqrt{R_{ac}^2 + X^2} \text{ (}\Omega \text{)}$$

$R_{ac}$  : AC resistance ( $\Omega$  /km)

X : Reactance ( $\Omega$  /km)

#### 7. Short circuit current

$$I_{sc} = (\epsilon k s / \sqrt{t}) (\sqrt{\ln((\beta + \theta_s) / (\beta + \theta_n))}) \text{ (KA)}$$

$\epsilon$  : Will be calculated acc.to IEC 60949

S : Cross sectional area (mm<sup>2</sup>)

t : Duration of short-circuit ( Max. 5 sec.)

$\theta_s$  : Max. temperature at the short circuit condition ( $^{\circ}$  C) (250 for XLPE)

$\theta_n$  : Max. temperature at the normal operating ( $^{\circ}$  C) (90 for XLPE)

	Copper	Aluminum	Lead	Steel
k	226	148	41	78
$\beta$	234.5	228	230	202





### 8. Charging current

$$I = C\omega U_0 10^{-3} \text{ (A/km)}$$

$\omega$  :  $2\pi f$

C : Capacitance ( $\mu\text{F/km}$ )

$U_0$  : voltage (KV)

### 9. Dielectric loss

$$P = C\omega U_0^2 \tan\delta \text{ (watt/km)}$$

$\omega$  :  $2\pi f$

C : Capacitance ( $\mu\text{F/km}$ )

$U_0$  : voltage (KV)

$\tan\delta$  : 0.001

### 10. Insulation resistance

$$R = (\rho \ln(D/d) 10^9) / 2\pi \text{ (M}\Omega\cdot\text{km)}$$

$\rho$  : Volume resistivity at 20 °C ( $\Omega \cdot \text{cm}$ ) (XLPE= $10^{14}$ )

D : Insulation diameter (mm)

d : Conductor diameter (mm)

### 11. Maximum pulling tension

Unarmoured :

$$T = K S \text{ (N)} \quad \begin{array}{l} K= 50 \text{ for copper} \\ K= 30 \text{ for aluminum} \end{array}$$

Armoured :

$$T = K D^2 \text{ (N)} \quad \begin{array}{l} K= 9 \text{ for wire armour} \\ K= 3 \text{ for tape armour, lead sheath} \end{array}$$

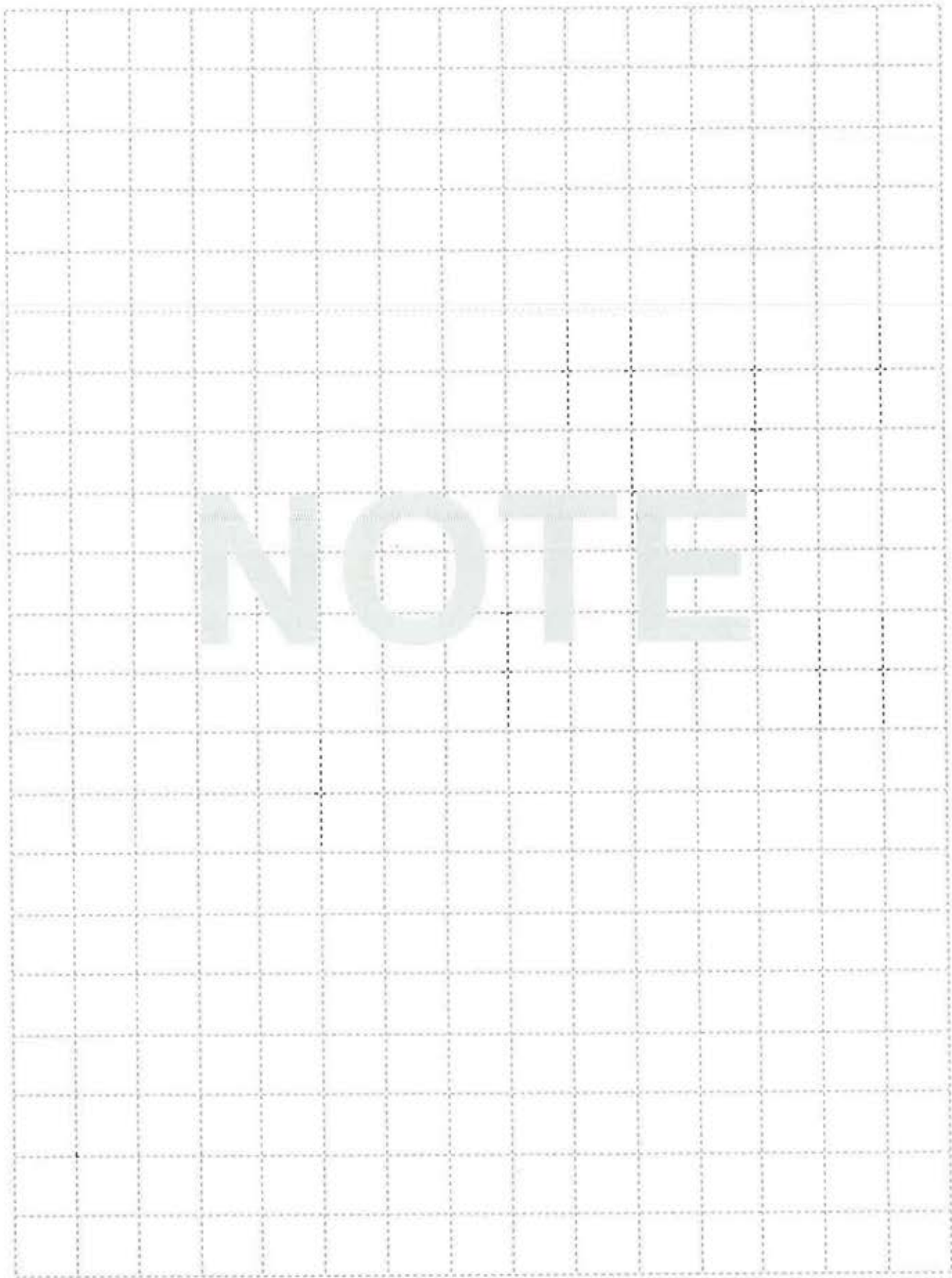
S : Conductor cross section ( $\text{mm}^2$ )

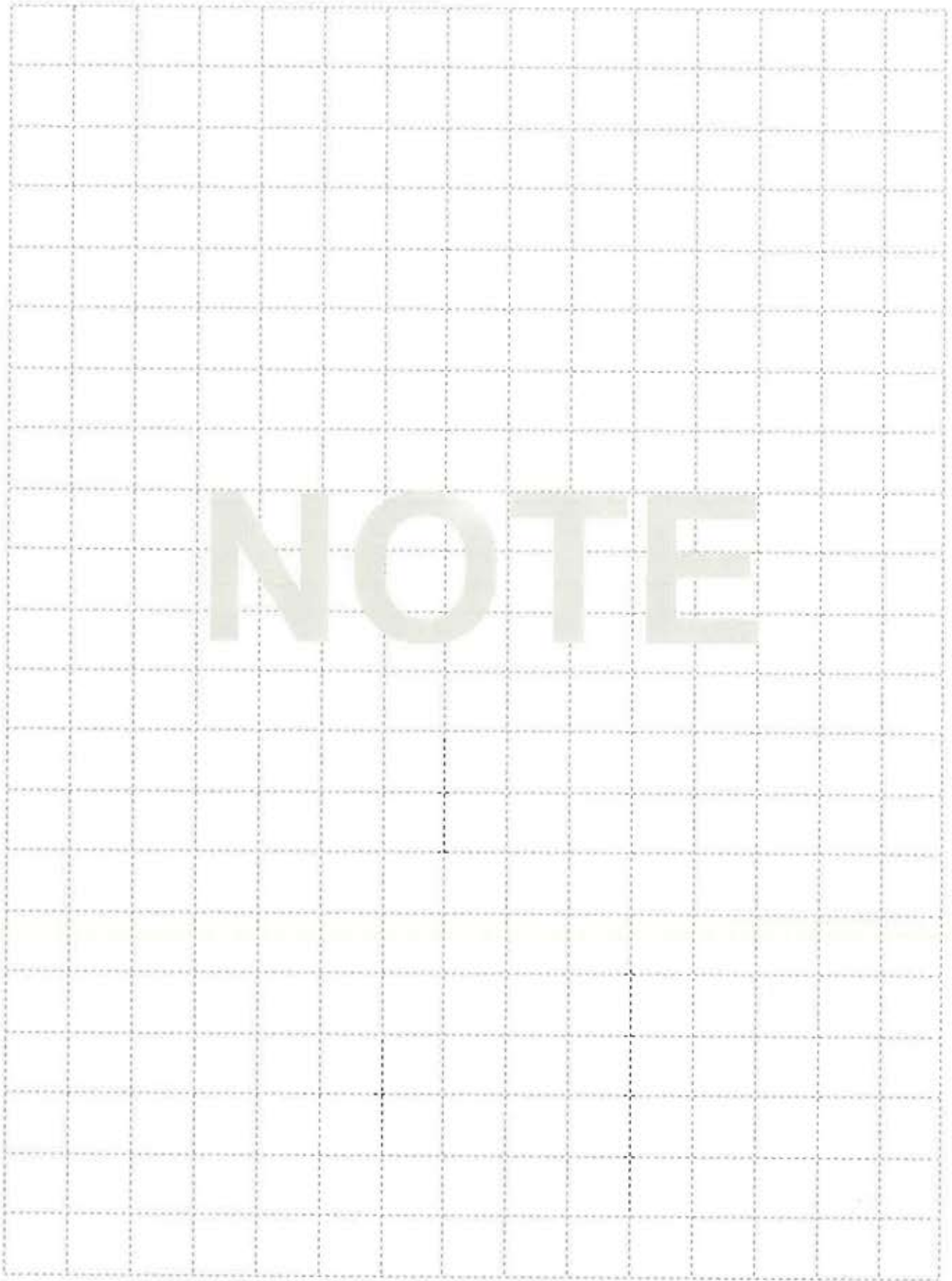
D : Cable diameter (mm)



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