



MARINE CABLES



Low and
Medium Voltage,
Control and
Instrumentation
Marine Cables

MARINE CABLES CATALOGUE

INDEX	
USER GUIDE	5
– Guide to common applications for Prysmian Cables and Systems marine cables	6
TECHNICAL INTRODUCTION	9
– Afumex Nau Cables	11
– General features of marine cable	12
– Maximum short-circuit currents	16
– Fire tests	18
LV POWER CABLES	21
– Afumex NAU XA 0.6/1 kV	23
– Afumex NAU XTCUA 0.6/1 kV	25
– Afumex Firs NAU XA 0.6/1 kV	27
– Afumex Firs NAU XTCUA 0.6/1 kV	29
– Afumex Plus 750V Quick System	31
– Retenax NAU RV-K 0.6/1 kV	33
MV POWER CABLES	35
– Afumex NAU DHA1 (single-pole)	37
– Afumex NAU DHA1 (three-pole)	38
– Afumex NAU DHA1TCUA1 (single-pole)	39
– Afumex NAU DHA1TCUA1 (three-pole)	40
CONTROL SYSTEM CABLES	41
– Afumex NAU XA 250 V	43
– Afumex NAU XTCUA 250 V (multi-pole)	45
– Afumex Firs NAU XA 250 V	47
– Afumex Firs NAU XTCUA 250 V (multi-pole)	49
INSTRUMENTATION SYSTEMS CABLES	51
– Afumex NAU XOA 250 V	53
– Afumex NAU XHA 250 V	55
– Afumex NAU XHOA 250 V	57
– Afumex NAU XTCUA 250 V (pairs)	59
– Afumex NAU XHTCUA 250 V	61
– Afumex Firs NAU XOA 250 V	63
– Afumex Firs NAU XHA 250 V	64
– Afumex Firs NAU XHOA 250 V	65
– Afumex Firs NAU XTCUA 250 V (pairs)	66
– Afumex Firs NAU XHTCUA 250 V	68
PACKING	69
– Packing	70
– Measurements, weights and conditions of return of cable reels	72

USER GUIDE

SUGGESTED USUAL APPLICATIONS FOR

- Flame retardancy: IEC 60332-1	
- Fire retardancy: IEC 60332-3, Cat. A	
- Halogen-free: IEC 60754-1	
- Low opaque smoke emission: IEC 61034-1, 2	
- Low corrosive gas emission: IEC 60754-2	
- Fire resistance: IEC 60331	

Afumex features	Fire resistance
-----------------	-----------------

Insulation		Screen/s				Screen / Armour	Covering	
X	D	H		O		TCU	A	V
XLPE	EPR	Individual, (Al /polyester)	Individual, (Cu wire armour)	Individual, (Cu metal band)	Collective, (Al / polyester)	Collective, (Cu braid)	Afumex	PVC

LV POWER CABLES

Page

AFUMEX PLUS 750V QUICK SYSTEM	31	●							●	
AFUMEX NAU XA 0.6/1 KV	23	●		●					●	
AFUMEX NAU XTCUA 0.6/1 KV	25	●		●			●		●	
AFUMEX FIRS NAU XA 0.6/1 KV	27	●	●	●					●	
AFUMEX FIRS NAU XTCUA 0.6/1 KV	29	●	●	●			●		●	
RETENAX NAU RV-K 0.6/1 KV	33			●						●

MV POWER CABLES

AFUMEX NAU DHA1 SINGLE-POLE	37	●			●				●	
AFUMEX NAU DHA1 THREE-POLE	38	●				●			●	
AFUMEX NAU DHA1TCUA1 SINGLE-POLE	39	●			●		●		●	
AFUMEX NAU DHA1TCUA1 THREE-POLE	40	●				●	●		●	

CONTROL SYSTEM CABLES

AFUMEX NAU XA 250V	43	●		●					●	
AFUMEX NAU XTCUA 250V MULTI-POLE	45	●		●			●		●	
AFUMEX FIRS NAU XA 250V	47	●	●	●					●	
AFUMEX FIRS NAU XTCUA 250V MULTI-POLE	49	●	●	●			●		●	

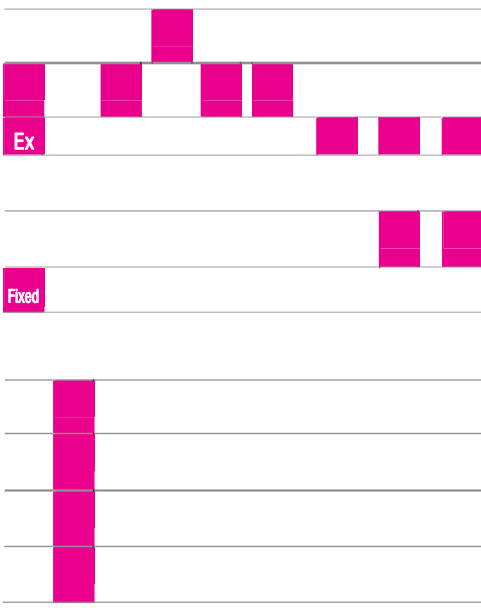
INSTRUMENTATION SYSTEM CABLES

AFUMEX NAU XOA 250V	53	●		●			●		●	
AFUMEX NAU XHA 250V	55	●		●	●				●	
AFUMEX NAU XHOA 250V	57	●		●	●		●		●	
AFUMEX NAU XTCUA 250V	59	●		●				●	●	
AFUMEX NAU XHTCUA 250V	61	●		●	●			●	●	
AFUMEX FIRS NAU XOA 250V	63	●	●	●			●		●	
AFUMEX FIRS NAU XHA 250V	64	●	●	●	●				●	
AFUMEX FIRS NAU XHOA 250V	65	●	●	●	●		●		●	
AFUMEX FIRS NAU XTCUA 250V	66	●	●	●				●	●	
AFUMEX FIRS NAU XHTCUA 250V	68	●	●	●	●		●		●	

PRYSMIAN CABLES AND SYSTEMS MARINE CABLES

POWER CIRCUITS

LV IN GENERAL
MV IN GENERAL
ALTERNATORS
BOX INTERIORS
BOX CONNECTIONS
MOTORS
MOTORS WITH FREQUENCY CONVERTER
VEHICLE TRANSPORT HOLD
COCKPIT

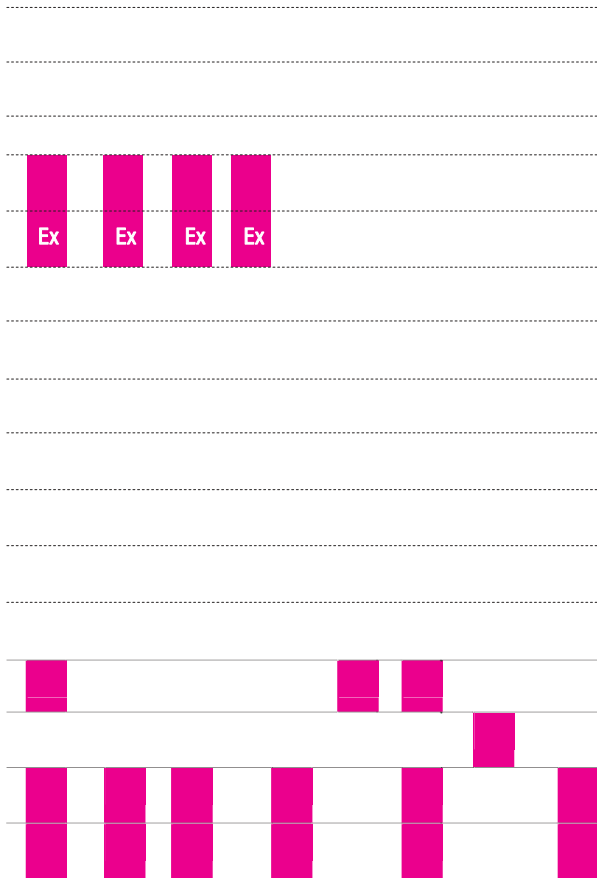


Ex

Fixed

ALARM SYSTEMS AND FIRE PROTECTION SYSTEMS

POWER SUPPLY TO PUMPS IN FIRE PREVENTION AND SPRINKLER SYSTEMS
ACTIVATING SPRINKLERS
ACTIVATING WATERTIGHT AND FIRE DOORS
EMERGENCY LIGHTING
LOW LOCATION LIGHTING
HANDLING AND SIGNALLING VENTILATORS
HANDLING AND POWER SUPPLY TO ALARM SYSTEMS
TRANSMISSION OF ANALOGICAL ALARM OR INFORMATION SIGNS
LOUDSPEAKER INSTRUCTION SYSTEMS



Ex

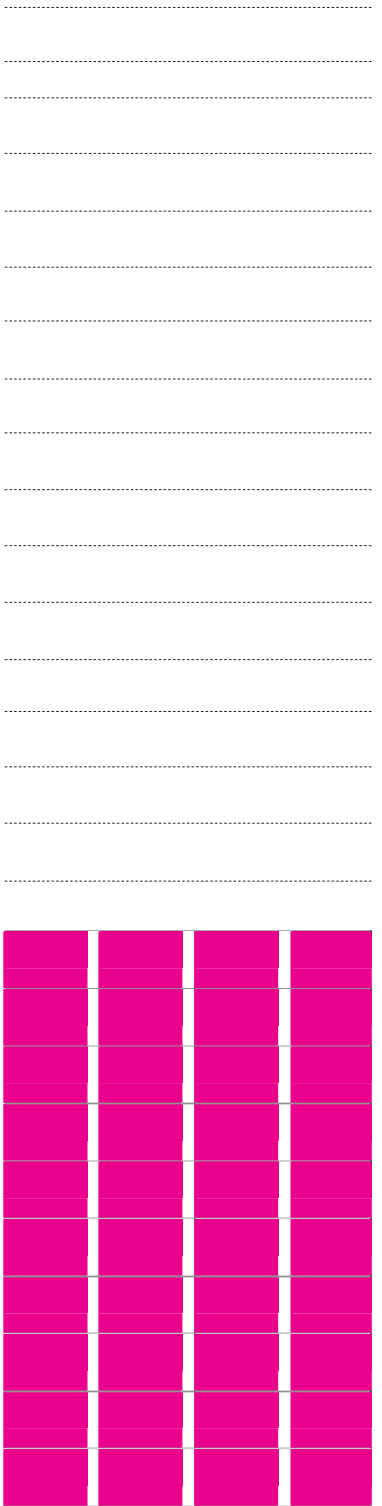
Ex

Ex

Ex

ANALOGUE AND / OR DIGITAL INSTRUMENTATION SYSTEMS

RUDDER SERVO
PLC INTERCONNECTIONS
PROPELLERS
MAIN ENGINE



TECHNICAL INTRODUCTION

AFUMEX NAU CABLES

The Afumex Nau name designates various large ranges of cables designed for the shipping sector. They cover all requirements, from the most common to the particular in each specific application.

Located in Vilanova i la Geltrú for over 100 years, Prysmian Cables and Systems has continued researching and developing new technology for application in electric cables. This effort has led to the new generation of high security Afumex Nau cables, in both halogen-free 250 V, 750 V and 1000 V versions and in Firs versions, which along with the features expected of halogen-free versions have fire resistance to 750°C. Consequently, these ranges of cables have been replacing our conventional cables, which did not offer such important features as low toxic and corrosive gas emission (to protect people and property in case of fire), reduced opacity (to improve bad visibility caused by smoke) and high fireproofing (to prevent spread of fire), all of which are found in these new Afumex Nau products.

Prysmian Cables and Systems, which has played a leading role in the sector, including the military navy, offshore platforms and ships and the merchant marine, continues to contribute to progress, quality and security in shipping.



GENERAL FEATURES OF MARINE CABLES

The marine cables are designed in accordance with specifications in international standard IEC 60092-350 (series). With reference to their functions, the cables can be classified as...

- Medium voltage (MV): MV power supply cables
- Low voltage (LV): power cables for generators, motors, lighting, power, distribution, turning gears, pumps, services, compressors, ventilators, winches, air conditioning, bilges, hosing, fire protection, projectors, signalling, living quarters, electric boxes, transformers, cranes, power sockets, etc.
- Control: cables for equipment control (manoeuvring, press buttons, signs, digital signals,...).
- Instrumentation: cables for automatism, alarm signals, communications, telephones, megaphones, navigation equipment, probes, radar, thermocouples, special equipment, etc.

With reference to their construction...

- With or without armour
- With or without screen/s
- Individual and/or collective screens

Prysmian Cables and Systems can adjust to particular specifications not catered for in this catalogue (for example: Shell, Statoil, Petrobras, etc.).

FEATURES OF CONSTRUCTION

CONDUCTORS

- Flexible class 5 bare copper, in accordance with IEC 60228 (rigid class 2 if required)
- Flexible, class 5 tinned copper, in accordance with IEC 60228 (rigid class 2 if required)

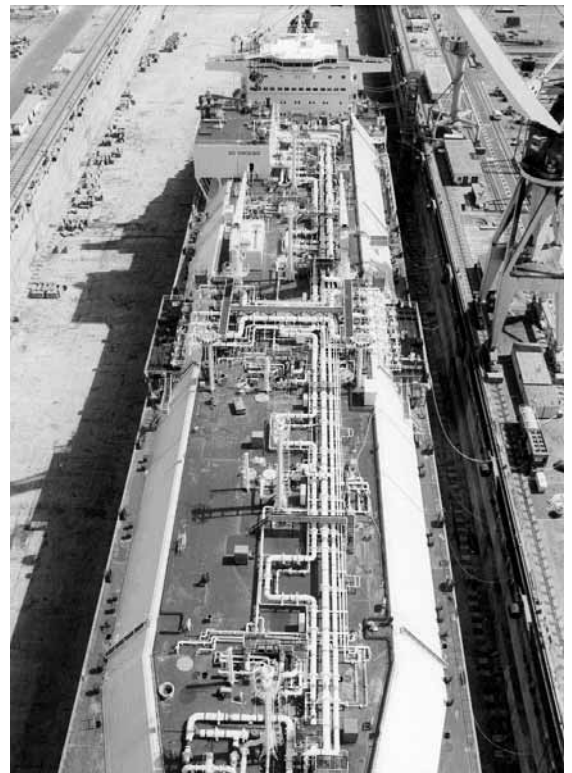
INSULATION

LV: Cross-Linked polyethylene (XLPE).

MV: Ethylene propylene (EPR).

Both types of insulation withstand 90 °C permanently and 250 °C in short-circuit conditions, surpassing marine standards, which set a permanent temperature requirement of 85 °C.

Conductors are identified by colour coding or by numbering printed on the insulation.



SCREENS

M.V.	L.V. / Control	Instrumentation
Copper band	Copper braid	Al / polyester band + CuSn drain wire
Copper wires		Cu / polyester band + CuSn drain wire
Copper braid / (low use)		Bare or tinned copper braid

ARMOUR

Single-pole cables	Other cables
Cu braid (tinned or not)	Cu braid (tinned or not)
Phosphor-bronze braid	Galvanized steel braid

Other types of armour available on request.

COVERINGS

Thermoplastics

- Afumex (thermoplastic polyolefin)
- PVC (if required)

Thermostable (if required)

- EVA (ethyl vinyl acetate)
- CSP (chlorosulphonated polyethylene)
- PCP (polychloroprene)
- CPE (chlorated polyethylene)

MINIMUM RADIUS OF CURVATURE

This is the minimum radius that the cable can adopt in its final position in service. It is applicable to all marine standard cables IEC 60092-352.

Outer diameter of cable	Cables without armour	Armoured cables
LV D ≤ 25mm	4D	6D
LV D > 25mm	6D	6D

FIRE TESTS

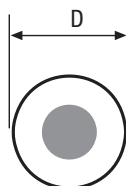
- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Fire resistance: IEC 60331
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

See fire tests section on page.

OTHER IMPORTANT FEATURES OF THE CABLES

The cables can be provided with special features such as:

- Resistance to humidity
- Resistance to oils
- Resistance to hydrocarbons
- Resistance to low temperatures



NAVAL CERTIFICATION AND APPROVAL INSTITUTIONS

Prysmian has certifications and approvals from the most important companies:



American Bureau Shipping (USA)
IEC 60092-350 series



Det Norske Veritas (Norway)
IEC 60092-350 series



Bureau Veritas (France)
IEC 60092-350 series



GOST & GOST-R (Russia)
BS 6883; BS 7917



Lloyd's Register (England)

An approval consists in evaluating cables' physical-chemical characteristics with **type testing** (fire, mechanical, chemical agent resistance tests...). Once compliance with the required parameters has been verified, the approving body issues an approval document with a determined period of validity.

Certification consists in controlling cables manufactured to order by making **routine tests** on 100% of the production. Such testing includes verification of dielectric rigidity, resistance of the insulation and resistance of the conductor. As well as the routine tests, special tests are normally made to control dimensions and stretching under heat on representative samples of the batches manufactured.

The controlling body prepares relevant quality certificates for cables manufactured to meet a specific order.

ACRONYMS USED TO DESIGNATE MARINE CABLES

Insulation:

X	XLPE (AFUMEX)
R	XLPE (NOT AFUMEX)
D	EPR

Screens

H	Individual screen (aluminium-polyester or copper-polyester)
O	Collective screen (aluminium-polyester or copper-polyester)
T	Galvanized steel braid
TCU	Copper braid
TB	Tinned phosphor-bronze braid
-K	Class 5 conductor

Coverings

A	AFUMEX thermoplastic and thermostable
A1	AFUMEX thermoplastic with EPR insulation
V	PVC

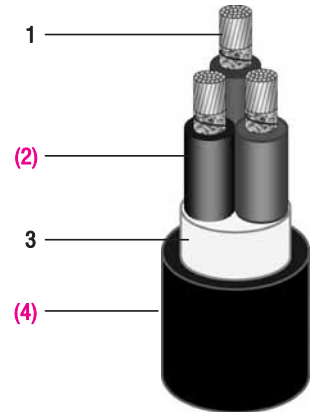
DESIGNATION EXAMPLES:

Afumex Firs NAU XA 0.6/1 kV

Afumex Firs Cable (fire resistant) with XLPE (Afumex) insulation and Afumex thermoplastic covering. Rated voltage 0.6/1 kV.

X: XLPE insulation (2)

A: Afumex covering (thermoplastic) (4)

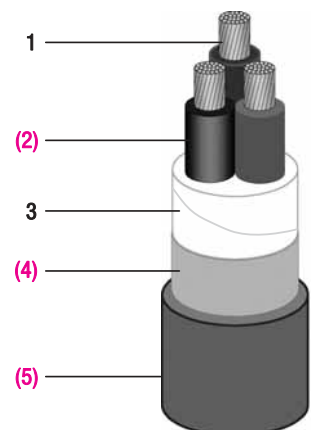
**Afumex NAU XTCUA 250 V**

Afumex cable with XLPE (Afumex) insulation, with collective copper braid screen and Afumex covering. Rated voltage 150/250 V.

X: XLPE insulation (2)

TCU: Collective copper braid screen (4)

A: Afumex covering (thermoplastic) (5)

**Afumex NAU XHOA 250 V**

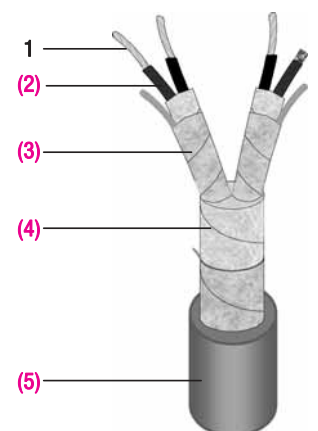
Afumex cable with XLPE (Afumex) insulation, individual and collective screen and Afumex covering. Rated voltage 150/250 V.

X: XLPE insulation (2)

H: Individual aluminium-polyester screen (3)

O: Collective aluminium-polyester screen (4)

A: Afumex covering (thermoplastic) (5)



(Cables can be manufactured to special design. Contact Prysmian Cables and Systems).

MAXIMUM SHORT-CIRCUIT CURRENTS

In accordance with standard IEC 60364-4-43, we can calculate the maximum short-circuit current supported by a cable using the following formula:

$$I_{cc} = k \cdot S / \sqrt{t}$$

Where

- I_{cc} : short-circuit current in amps.
- k : a constant depending on the type of conductor (Cu in our case) and type of insulation (thermoplastic [Z1 polyolefin] thermostable [XLPE or EPR])
- S : section of the conductor in mm^2
- t : duration of the short-circuit in seconds (minimum 0.1 seconds, maximum 5 seconds).

Applying values to the formula the following tables are obtained:

TABLE a.
Short-circuit current admissible (A) for Cu conductors with thermostable insulation (type XLPE or EPR), max 250 °C in short-circuit.
($I_{cc} = 143 \cdot S / \sqrt{t}$)

Section (S)	Duration of the short-circuit in seconds								
	0.1	0.2	0.3	0.5	1	1.5	2	2.5	3
0.5	226	160	131	101	72	58	51	45	41
0.75	339	240	196	152	107	88	76	68	62
1	452	320	261	202	143	117	101	90	83
1.5	678	480	392	303	215	175	152	136	124
2.5	1,131	799	653	506	358	292	253	226	206
4	1,809	1,279	1,044	809	572	467	404	362	330
6	2,713	1,919	1,566	1,213	858	701	607	543	495
10	4,522	3,198	2,611	2,022	1,430	1,168	1,011	904	826
16	7,235	5,116	4,177	3,236	2,288	1,868	1,618	1,447	1,321
25	11,305	7,994	6,527	5,056	3,575	2,919	2,528	2,261	2,064
35	15,827	11,192	9,138	7,078	5,005	4,087	3,539	3,165	2,890
50	22,610	15,988	13,054	10,112	7,150	5,838	5,056	4,522	4,128
70	31,654	22,383	18,276	14,156	10,010	8,173	7,078	6,331	5,779
95	42,960	30,377	24,803	19,212	13,585	11,092	9,606	8,592	7,843
120	54,265	38,371	31,330	24,268	17,160	14,011	12,134	10,853	9,907
150	67,831	47,964	39,162	30,335	21,450	17,514	15,167	13,566	12,384
185	83,658	59,155	48,300	37,413	26,455	21,600	18,707	16,732	15,274
240	108,529	76,742	62,659	48,536	34,320	28,022	24,268	21,706	19,815
300	135,662	95,927	78,324	60,670	42,900	35,028	30,335	27,132	24,768

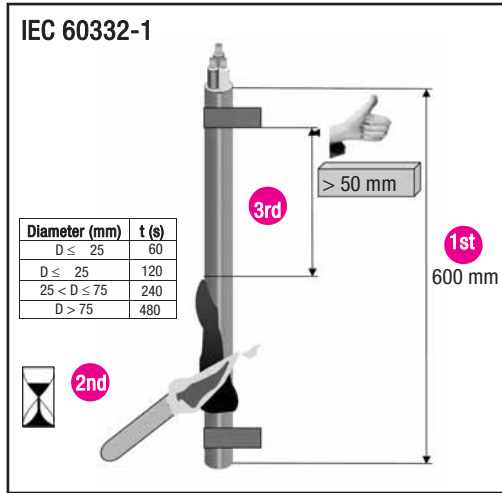
TABLE b.
Short-circuit current admissible (A) for Afumex Plus (AS) cables (page 31), maximum 160 °C in short-circuit. ($I_{sc} = 115 \cdot S/\sqrt{t}$)

Section (S)	Duration of the short-circuit in seconds								
	0.1	0.2	0.3	0.5	1	1.5	2	2.5	3
0.5	182	129	105	81	58	47	41	36	33
0.75	273	193	157	122	86	70	61	55	50
1	364	257	210	163	115	94	81	73	66
1.5	545	386	315	244	173	141	122	109	100
2.5	909	643	525	407	288	235	203	182	166
4	1,455	1,029	840	651	460	376	325	291	266
6	2,182	1,543	1,260	976	690	563	488	436	398
10	3,637	2,571	2,100	1,626	1,150	939	813	727	664
16	5,819	4,114	3,359	2,602	1,840	1,502	1,301	1,164	1,062
25	9,092	6,429	5,249	4,066	2,875	2,347	2,033	1,818	1,660
35	12,728	9,000	7,349	5,692	4,025	3,286	2,846	2,546	2,324
50	18,183	12,857	10,498	8,132	5,750	4,695	4,066	3,637	3,320
70	25,456	18,000	14,697	11,384	8,050	6,573	5,692	5,091	4,648
95	34,548	24,429	19,946	15,450	10,925	8,920	7,725	6,910	6,308
120	43,639	30,858	25,195	19,516	13,800	11,268	9,758	8,728	7,967
150	54,549	38,572	31,494	24,395	17,250	14,085	12,198	10,910	9,959
185	67,277	47,572	38,843	30,087	21,275	17,371	15,044	13,455	12,283
240	87,279	61,715	50,390	39,032	27,600	22,535	19,516	17,456	15,935
300	109,099	77,144	62,988	48,790	34,500	28,169	24,395	21,820	19,919

FIRE TESTS



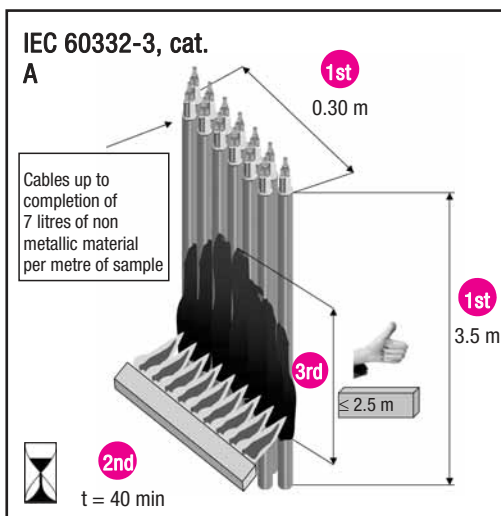
FLAME RETARDANCY



The flame retardancy test (IEC 60332-1) consists in checking the fireproofing of a single simple of cable in vertical position. Depending on the outer diameter of the cable, the flame is applied for between 1 and 8 minutes. The test is considered passed if fire does not affect the cable past the last 5 cm. The spread of flame is also limited towards below the fire.



FIRE RETARDANCY (CATEGORY A)

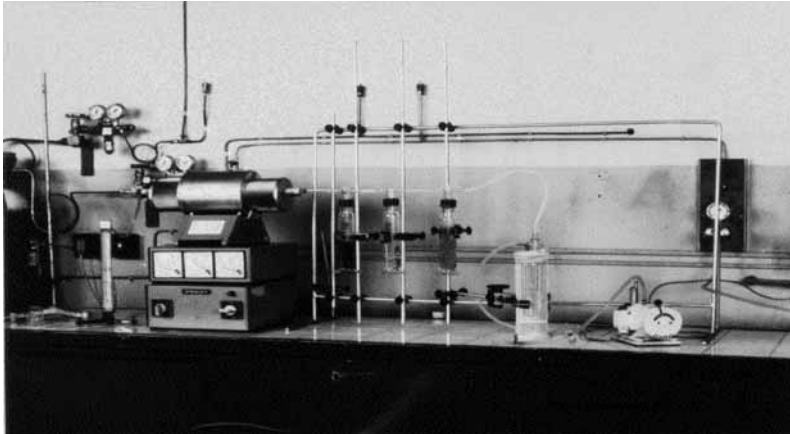


Cables are normally grouped in the cable runs, making it necessary to check behaviour in fire conditions in group. In the fire retardancy test, (IEC 60332-3, category A) samples of 3.5 m of a determined section are grouped to completion of until 7 litres of non metallic material per metro of sample. They are subjected to the action of flames for 40 minutes. If the final length affected by fire is less than 2.5 m, the test is considered as passed.

FIRE TESTS



HALOGEN-FREE AND VERY LOW EMISSION OF CORROSIVE GASES



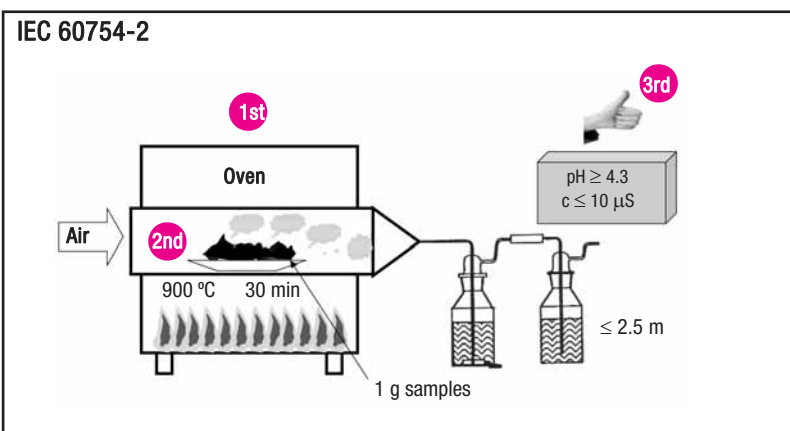
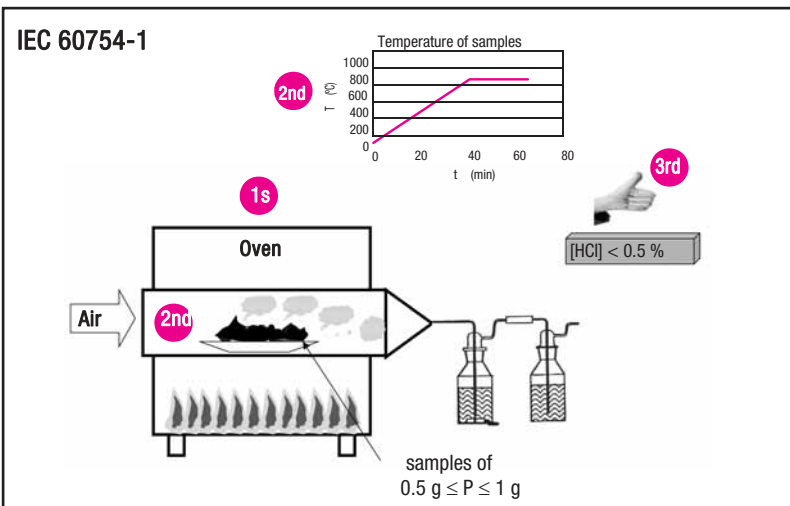
These two similar tests demonstrate that the cable tested is halogen free (does not emit HCl or other halogenated composites in combustion) and that the gases emitted are of very low corrosiveness, with the aim of protecting people and property in case of fire.

The tests are carried out by burning combustible material from the cable cut into small pieces in an oven at temperatures between 800 and 900 degrees and analyzing the gases emitted using wash bottles.

The IEC 60754-1 and 60754-2 standards tests verify that the cable is halogen free and that its combustible products are of very low corrosiveness.

Very low corrosiveness is considered to pertain when the pH of the gases emitted is greater or equal to 4.3 and their conductivity is less than or equal to 10 microsiemens per millimetre (IEC 60754-2). This measurement indirectly indicates the absence of halogens.

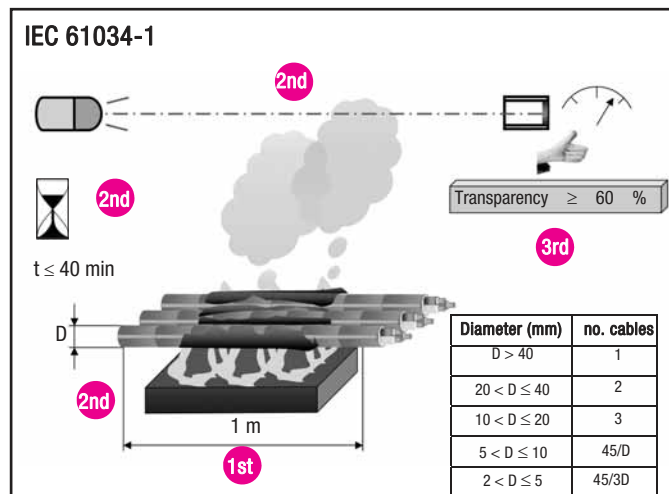
The procedures in the IEC 60754-1 standard test also serve to detect an HCl concentration of less than 0.5 %.



FIRE TESTS



LOW OPAQUE SMOKE EMISSION



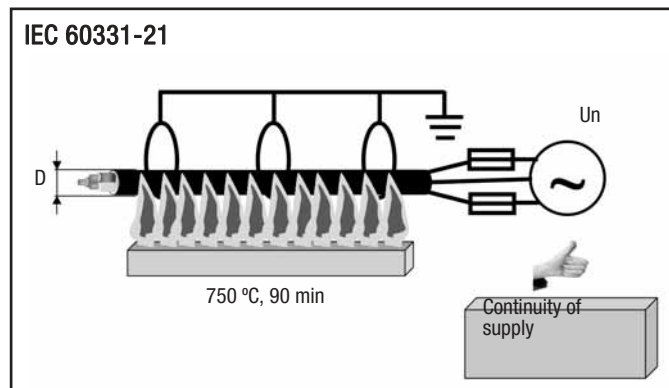
The opacity of smoke produced by fires is an important factor to be considered when the occupants of a site must evacuate it in the first moments, even if extinction and rescue teams are to take action a few minutes later in the premises affected by the accident.

For the low opacity test in smoke (IEC 61034-1), 1m samples of cable are burnt in a 3m x 3m x 3m cabin. The number of samples depends on the outer diameter (see drawing). The test is considered to be completed when there is no decrease in transmittance of light for five minutes after the source of the fire has been extinguished or when the duration of the test reaches 40 minutes.

There is considered to be low opaque smoke emission if at the end of the test the transparency of the beam of light inside the cabin is $\geq 60\%$.



FIRE RESISTANCE



Fire resistance attempts to show the capacity of the cable to provide service in extreme fire conditions. Fire resistant cables are used for services which are intended to continue to function in case of fire (security and indispensable services).

The IEC 60331-21 test submits a sample of cable to 750 °C for 90 minutes (ask about other types of test). The test is considered to be passed if there is no breakage in conductors, no contact between them or with the rings of the equipment supporting the cable, and they are connected to earth.

NOTE: other tests or variations on those described can be carried out, as required.

LV POWER AND CONTROL CABLES

AFUMEX NAU XA 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard: **IEC 60092-353**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1
flame retardant



IEC 60332-3 fire
retardant



IEC 61034-1/-2 Low
opaque smoke
emission



IEC 60754-1
Halogen-free



IEC 60754-2 Low
corrosive gases
emission



NFC 20454 Reduced
toxic-gas emission



Water absorption
resistance



Cold resistant



Resistance to
ultraviolet rays

- Design standard: IEC 60092-353
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 0.6/1 kV
- 5-minute AC voltage test: 3500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

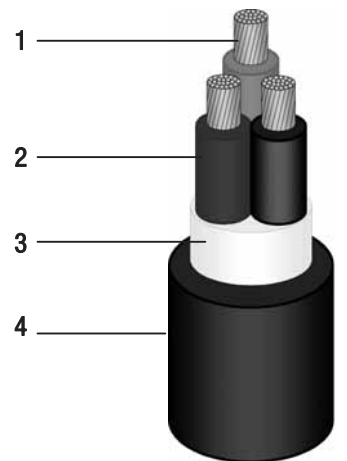
- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue (3x); or blue, brown, and yellow-green (3G). / 4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

- Material:** Halogen free suitable (when required).

COVERING (4)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Black.
- Marking:** PRYSMIAN AFUMEX NAU XA 0.6/1 kV, [section], [year manufactured], IEC 60092-353, IEC 60332-3/A, [corresponding length].



USES

Cable for power circuits, alternators, distribution between power boxes, power supply to motors. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XA 0.6/1 kV

Rated voltage: 0.6/1 kV

Design standard IEC 60092-353



TECHNICAL SPECIFICATIONS

Code	Number of conductors x sección mm ²	Nominal Exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Resistance of conductor 20 °C - c.c. \wedge /km	Maximum I** 45 °C (Ambient T) 50 Hz A
20063531	1 x 10	7.5	30	130	0.3087	1.910	67
20063530	1 x 16	8.6	34	190	0.2894	1.210	91
20030055	1 x 25	10.4	42	280	0.2856	0.780	120
40011070	1 x 35	11.9	48	380	0.2703	0.554	148
40011069	1 x 50	13.8	55	550	0.2652	0.386	184
40000920	1 x 70	15.5	62	740	0.2628	0.272	228
40001825	1 x 95	17.0	68	960	0.2548	0.206	276
40001501	1 x 120	18.7	75	1180	0.2538	0.161	319
40001500	1 x 150	21.0	84	1470	0.253	0.129	367
40011067	1 x 185	23.5	94	1830	0.2495	0.106	418
40011068	1 x 240	26.5	159	2340	0.2457	0.080	492
20030041	2 x 1,5	7.9	32	90	0.3183	13.300	18
20030042	2 x 2,5	9.0	36	120	0.2953	7.980	24
20030043	2 x 4	9.9	40	150	0.2791	4.950	32
20030044	2 x 6	11.1	44	200	0.2648	3.300	42
20031788	2 x 10	13.5	54	310	0.2469	1.910	57
20031789	2 x 16	15.8	63	440	0.2363	1.210	77
20030045	3 x 1,5	8.3	33	100	0.3183	13.300	15
20030046	3 x 2,5	9.5	38	140	0.2953	7.980	20
20030047	3 x 4	10.5	42	190	0.2791	4.950	27
20030048	3 x 6	12.0	48	260	0.2648	3.300	34
20030049	3 x 10	14.4	57	400	0.2469	1.910	47
20022156	3 x 16	16.8	67	580	0.2363	1.210	64
20022157	3 x 25	21.3	85	960	0.2381	0.780	84
20031791	3 x 35	24.8	99	1310	0.2295	0.554	104
40002033	3 x 50	28.6	172	1860	0.227	0.386	124
40002032	3 x 70	32.2	193	2500	0.226	0.272	160
40002031	3 x 95	35.9	215	3250	0.2216	0.206	193
40004057	3 x 120	39.2	235	3990	0.2213	0.161	223
40011071	3 x 150	44.2	265	4980	0.2223	0.129	257
20050870	3 x 185	50.3	302	6290	0.2223	0.106	293
20064396	3 G 1,5	8.3	33	100	0.3183	13.300	18
20044762	3 G 2,5	9.5	38	140	0.2953	7.980	24
20061408	3 G 4	10.5	42	190	0.2791	4.950	32
20061409	3 G 6	12.0	48	260	0.2648	3.300	42
20064397	3 G 10	14.4	57	400	0.2469	1.910	57
20064398	3 G 16	16.8	67	580	0.2363	1.210	77
20030050	4 x 1,5	9.4	37	130	0.3183	13.300	15
20070423	4 x 2,5	10.4	33	180	0.2953	7.980	20
20050500	4 x 4	11.8	47	240	0.2791	4.950	27
20060457	4 x 6	13.1	53	330	0.2648	3.300	34

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

AFUMEX NAU XTCUA 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard: **IEC 60092-353**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1
flame retardant



IEC 60332-3 fire
retardant



IEC 61034-1/-2 Low
opaque smoke
emission



IEC 60754-1
Halogen-free



IEC 60754-2 Low
corrosive gases
emission



NFC 20454 Reduced
toxic-gas emission



Water absorption
resistance



Cold resistant



Resistance to
ultraviolet rays

- Design standard: IEC 60092-353
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 0.6/1 kV
- 5-minute AC voltage test: 3500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue.
4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

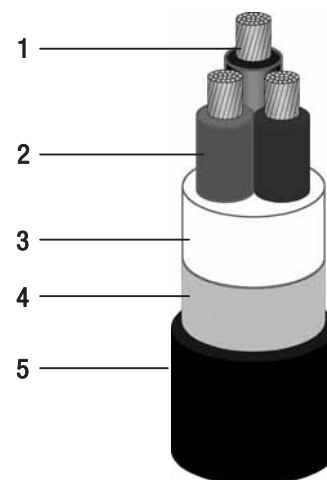
Polyester bands (for sections ≤ 10 mm²) or thermoplastic halogen-free material.

SCREEN/ARMOUR (4)

Bare copper wire braid (tinned if required).

COVERING (5)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Black.
- Marking:** PRYSMIAN AFUMEX NAU XTCUA 0.6/1 kV, [section], [year manufactured], EC 60092-353, IEC 60332-3/A, [corresponding length].



USES

Cable for power circuits requiring screens, such as power supply for motors via frequency converters, power supplies passing through Ex-areas or areas where cable requires additional protection to withstand knocks, transport vehicle garages, power supply to pilot house equipment and roofs, etc. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XTCUA 0.6/1 kV

Rated voltage: **0.6/1 kV**Design standard: **IEC 60092-353**

TECHNICAL SPECIFICATIONS

Code	Number of conductors x sección mm ²	Nominal Ø under armour* mm	Nominal exterior Ø* Mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Conductor resistance 20 °C - c.c. Ω/km	Maximum I** 45 °C (ambient T 50 Hz A
20063513	1 x 10	5.6	8.4	50	180	0.3310	1.910	67
20063514	1 x 16	8.6	11.8	71	320	0.3528	1.210	91
20063515	1 x 25	10.2	13.4	80	440	0.3363	0.780	120
20025178	1 x 35	11.7	15.5	93	610	0.3231	0.554	126
20025204	1 x 50	13.4	17.2	103	790	0.3092	0.386	184
40011302	1 x 70	14.9	18.9	113	1010	0.3025	0.272	228
40001575	1 x 95	16.4	20.6	124	1270	0.2931	0.206	276
40001576	1 x 120	17.9	22.1	132	1510	0.2872	0.161	319
40001577	1 x 150	20.0	24.4	146	1840	0.2830	0.129	367
40011241	1 x 185	22.5	27.1	163	2260	0.2780	0.106	418
40001805	1 x 240	25.3	30.1	181	2810	0.2711	0.080	492
20021600	2 x 1,5	6.0	9.0	54	120	0.3183	13.300	18
20040633	2 x 2,5	6.9	9.9	60	150	0.2953	7.980	24
20040634	2 x 4	7.9	11.1	66	190	0.2791	4.950	32
20040635	2 x 6	9.0	12.2	73	240	0.2648	3.300	42
20070424	2 x 10	11.2	15.0	90	390	0.2469	1.910	57
20070425	2 x 16	15.2	19.2	115	720	0.2363	1.210	77
20070426	2 x 25	18.4	22.6	136	1010	0.2381	0.780	102
20021601	3 x 1,5	6.4	9.4	56	150	0.3183	13.300	15
20040636	3 x 2,5	7.5	10.5	63	190	0.2953	7.980	20
20040637	3 x 4	8.4	11.6	70	240	0.2791	4.950	27
20040638	3 x 6	9.7	12.9	77	310	0.2648	3.300	34
20040639	3 x 10	12.1	15.9	95	500	0.2469	1.910	47
20064861	3 x 16	16.2	20.2	121	880	0.2363	1.210	64
20060606	3 x 25	19.7	24.1	145	1260	0.2381	0.780	84
20071264	3 x 35	23.0	27.6	165	1670	0.2295	0.554	104
40001578	3 x 50	26.6	31.4	189	2270	0.2270	0.386	124
40001579	3 x 70	30.2	35.4	212	3000	0.226	0.272	160
40001580	3 x 95	33.5	39.3	236	3880	0.2216	0.206	193
40010636	3 x 120	36.6	42.8	257	4720	0.2213	0.161	223
20052910	3 x 150	41.7	48.1	288	5820	0.2223	0.129	257
20052911	3 x 185	47.1	53.9	324	7210	0.2223	0.106	293
20052912	3 x 240	53.5	60.7	364	9160	0.2200	0.080	344
20063566	4 x 1,5	7.3	10.3	62	180	0.3183	13.300	15
20063517	4 x 2,5	8.4	11.6	69	230	0.2953	7.980	20
20070427	4 x 4	9.5	12.7	76	300	0.2791	4.950	27
20060459	4 x 6	10.9	14.7	88	430	0.2648	3.300	34

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

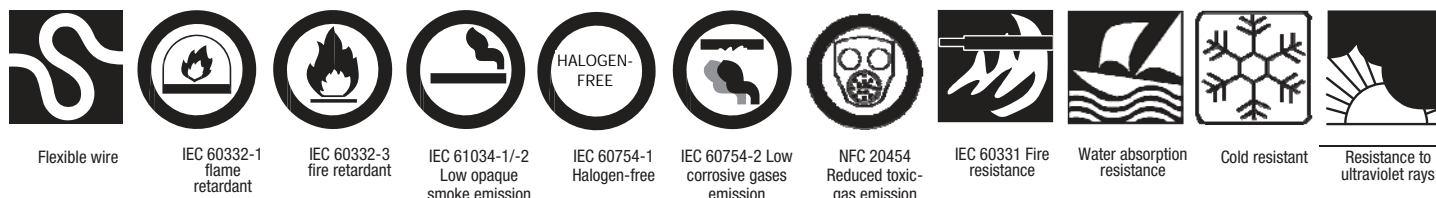
AFUMEX FIRS NAU XA 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard **IEC 60092-353**



CABLE SPECIFICATIONS



- Design standard: IEC 60092-353
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 0.6/1 kV
- 5-minute AC voltage test: 3500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance: IEC 60331**
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

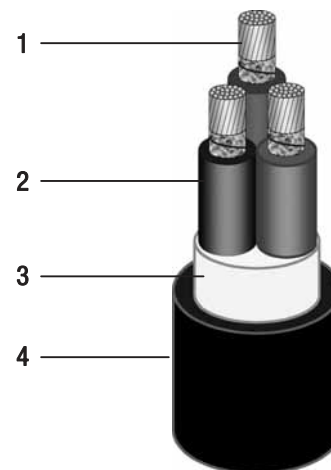
- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue.
4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

- Material:** Halogen free suitable (when required).

COVERING (4)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Black.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XA 0.6/1 kV, [section], [year manufactured], IEC 60092-353, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Cable for power circuits which the ship's classification societies require to function in case of fire, such as emergency fire fighting pumps, sprinkler pumps, sprinklers, locally applied fire extinction, watertight doors, fire doors, emergency lighting, etc. **Fire resistant**, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

AFUMEX FIRS NAU XA 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard: **IEC 60092-353**

TECHNICAL SPECIFICATIONS

Code	Number of conductors x section mm ²	Nominal Exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Resistance of conductor 20 °C - c.c. Ω /km	Maximum I** 45 °C (ambient T) 50 Hz A
20070428	1 x 10	8.1	32	140	0.3230	1.910	67
20070429	1 x 16	9.3	37	200	0.3064	1.210	91
20044490	1 x 25	11.0	44	290	0.2963	0.780	120
20044491	1 x 35	12.8	51	400	0.2844	0.554	148
20044492	1 x 50	14.4	58	550	0.2737	0.386	184
20064526	1 x 70	16.1	64	750	0.2704	0.272	228
20044493	1 x 95	17.6	70	960	0.2617	0.206	276
20070431	1 x 120	19.3	77	1190	0.2601	0.161	319
20044494	1 x 150	21.6	86	1480	0.2587	0.129	367
20070432	1 x 185	24.3	97	1850	0.2562	0.106	418
20044495	1 x 240	27.3	164	2360	0.2516	0.080	492
20024912	2 x 1,5	9.5	38	110	0.3616	13.300	18
20024905	2 x 2,5	10.4	42	140	0.3324	7.980	24
20044483	2 x 4	11.3	45	180	0.3112	4.950	32
20024904	2 x 6	12.6	50	230	0.2926	3.300	42
20044484	2 x 10	14.6	58	330	0.2662	1.910	57
20070433	2 x 16	16.9	68	470	0.2527	1.210	77
20070434	2 x 25	21.0	84	770	0.2515	0.780	102
20044485	3 x 1,5	10.1	40	130	0.3616	13.300	15
20024913	3 x 2,5	11.0	44	170	0.3324	7.980	20
20044486	3 x 4	12.2	49	230	0.3112	4.950	27
20044487	3 x 6	13.4	54	290	0.2926	3.300	34
20044488	3 x 10	15.8	63	440	0.2662	1.910	47
20044489	3 x 16	18.0	72	610	0.2527	1.210	64
20060614	3 x 25	22.5	90	1000	0.2515	0.780	84
20060461	3 x 35	26.2	157	1370	0.2428	0.554	104
20024941	3 x 50	30.1	181	1910	0.2373	0.386	124
20024914	4 x 1,5	11.1	44	160	0.3616	13.300	15
20070435	4 x 2,5	12.1	48	210	0.3324	7.980	20

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

AFUMEX FIRS NAU XTCUA 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard: **IEC 60092-353**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1
flame retardant



IEC 60332-3 fire
retardant



IEC 61034-1/-2
Low opaque smoke
emission



IEC 60754-1
Halogen-free



IEC 60754-2 Low
corrosive gases
emission



NFC 20454 Reduced
toxic-gas emission



IEC 60331 Fire
resistance



Water absorption
resistance



Cold resistant

- Design standard: IEC 60092-353
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 0.6/1 kV
- 5-minute AC voltage test: 3500 V



Resistance to
ultraviolet rays

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance:** IEC 60331
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue.
4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

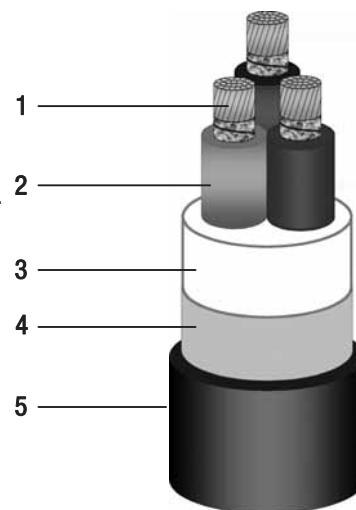
Polyester bands (for sections · 10 mm²) or thermoplastic halogen-free material.

SCREEN/ARMOUR (4)

Bare copper wire braid (tinned if required).

COVERING (5)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Black.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XTCUA 0.6/1 kV, [section], [year manufactured], IEC 60092-353, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Cable for power circuits which the ship's classification societies require to function in case of fire, such as emergency fire fighting pumps, sprinkler pumps, sprinklers, locally applied fire extinction, watertight doors, fire doors, emergency lighting, etc., which pass through Ex-areas or areas where cable requires additional protection to withstand knocks, transport vehicle garages, power supply to pilot house equipment and roofs, etc. **Fire resistant**, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

AFUMEX FIRS NAU XTCUA 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard: **IEC 60092-353**

TECHNICAL SPECIFICATIONS

Code	Number of conductors x	Nominal Ø under armour* mm	Nominal exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Conductor resistance 20 °C - c.c. Ω/km	Maximum I** 45 °C (ambient T) 50 Hz A
20070438	1 x 10	6.2	9.2	55	180	0.3483	1.910	67
20070439	1 x 16	9.1	12.3	74	320	0.3621	1.210	91
20044477	1 x 25	10.8	14.0	84	430	0.3446	0.780	120
20044478	1 x 35	12.4	16.2	97	600	0.3316	0.554	148
20044479	1 x 50	14	18.0	108	790	0.3183	0.386	184
20070440	1 x 70	15.5	19.5	117	990	0.3088	0.272	228
20044480	1 x 95	17.0	21.2	127	1230	0.2989	0.206	276
20070441	1 x 120	18.5	22.7	136	1480	0.2926	0.161	319
20044481	1 x 150	20.6	25.0	150	1800	0.2879	0.129	367
20070442	1 x 185	23.1	27.7	166	2210	0.2823	0.106	418
20044482	1 x 240	25.9	30.7	184	2760	0.2751	0.080	492
20024908	2 x 1,5	7.5	10.5	63	150	0.3616	13.300	18
20024354	2 x 2,5	8.3	11.5	69	180	0.3314	7.980	24
20044470	2 x 4	9.3	12.5	75	220	0.3090	4.950	32
20044471	2 x 6	10.3	13.5	81	280	0.2929	3.300	42
20044472	2 x 10	12.3	16.1	97	410	0.2662	1.910	57
20070443	2 x 16	16.3	20.3	122	770	0.2527	1.210	77
20070444	2 x 25	19.6	24.0	144	1080	0.2515	0.780	102
20044371	3 x 1,5	8.0	11.0	66	180	0.3616	13.300	15
20044473	3 x 2,5	9.0	12.2	73	230	0.3314	7.980	20
20044474	3 x 4	10.0	13.2	79	280	0.3090	4.950	27
20024909	3 x 6	11.1	14.9	89	400	0.2929	3.300	34
20044475	3 x 10	13.3	17.3	104	550	0.2662	1.910	47
20044476	3 x 16	17.4	21.6	130	940	0.2527	1.210	64
20070445	3 x 25	20.9	25.3	152	1320	0.2515	0.780	84
20020877	3 x 35	24.4	29.0	174	1740	0.2428	0.554	104
20020878	3 x 50	27.9	32.7	196	2310	0.2373	0.386	124
40006384	3 x 70	31.4	36.6	220	3050	0.2351	0.272	160
20053339	4 x 1,5	9.0	12.2	73	220	0.3616	13.300	15
20070446	4 x 2,5	10.1	13.3	80	270	0.3314	7.980	20

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

AFUMEX PLUS 750V QUICK SYSTEM (AS) **Quick System**

Rated voltage: **300/500 V**
450/750 V

Basic standard: **UNE 211002**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1
flame retardant



IEC 60332-3 fire
retardant



IEC 61034-1/-2 Low
opaque smoke
emission



IEC 60754-1
Halogen-free



IEC 60754-2 Low
corrosive gases
emission



NFC 20454
Reduced toxic-gas
emission



Water absorption
resistance



Cold resistant

- Build standard: UNE 211002.
- Operating temperature (permanent installation): - 40 °C, + 70 °C.
- Rated voltage for service: 300/500 V up to 1 mm² and 450/750 V from 1.5 mm².
- 5-minute AC voltage test: 2000 V in ES05Z1-K cables and 2500 V in ES07Z1-K cables.

Fire tests:

- Flame retardancy: UNE EN 50265-2-1 ; IEC 60332-1 ; NFC 32070-C2.
- Fire retardancy: UNE EN 50266-2-4; IEC 60332-3; NFC 32070-C1.
- Halogen-free: UNE EN 50267-2-1 ; IEC 60754-1 ; BS 6425-1.
- Reduced toxic-gas emission: NES 713 ; NFC 20454 ; $It \leq 1,5$.
- Low opaque smoke emission: UNE EN 50268 ; IEC 61034 - 1,2.
- Very low corrosive gas emission: UNE EN 50267-2-3 ; IEC 60754-2 ; NFC 20453 ; BS 6425-2 ; $pH \geq 4.3$; $C \leq 10 \mu S/mm$.

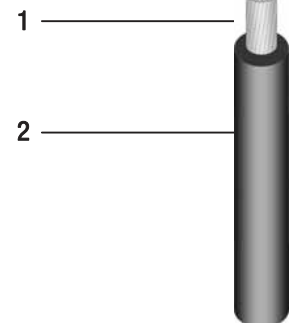
DESCRIPTION

CONDUCTOR (1)

Metal: Annealed electrolytic copper.

Flexibility: Flexible, class 5; in accordance with UNE EN 60228.

Maximum conductor temperature: 70°C for permanent operation, 160°C for short circuit.



INSULATION (2)

Material: AFUMEX TI Z1 halogen-free special thermoplastic mix.

Colours: Yellow, yellow /green, blue, white, grey, brown, red and black.

USES

Cable for electric boxes. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX PLUS 750V QUICK SYSTEM (AS) *Quick System*

Rated voltage: **300/500 V**
450/750 V

Basic standard: **UNE 211002**



TECHNICAL SPECIFICATIONS

Nominal section mm ²	Insulation thickness mm	Outer diameter mm	Total weight kg/km	Resistance of conductor to 20 °C Ω /km
1 x 0,5	0,6	2,1	9	39
1 x 0,75	0,6	2,3	11	26,5
1 x 1	0,6	2,8	14	19,5
1 x 1,5	0,7	3,4	20	13,3
1 x 2,5	0,8	4,1	32	7,98
1 x 4	0,8	4,8	46	4,95
1 x 6	0,8	5,3	65	3,30
1 x 10	1,0	6,8	111	1,91
1 x 16	1,0	8,1	164	1,21
1 x 25	1,2	10,2	255	0,78
1 x 35	1,2	11,7	351	0,554
1 x 50	1,4	13,9	520	0,386
1 x 70	1,4	16	700	0,272
1 x 95	1,6	18,2	920	0,206
1 x 120	1,6	20,2	1130	0,161
1 x 150	1,8	22,5	1410	0,127
1 x 185	2,0	20,6	1770	0,106
1 x 240	2,2	28,4	2300	0,0801

RETENAX NAU RV-K 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard: **IEC 60092-353**

CABLE SPECIFICATIONS



IEC 60332-1
flame retardant



IEC 60332-3 fire
retardant



Water absorption
resistance



Cold resistant



Resistance to
ultraviolet rays



Resistance to
chemical agents



Resistance to grease
and oil

- Design standard: IEC 60092-353
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 0.6/1 kV
- 5-minute AC voltage test: 3500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Low halogen emission: IEC 60754-1 (HCl ≤ 14%)

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
Flexibility: Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
Maximum conductor temperature: 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

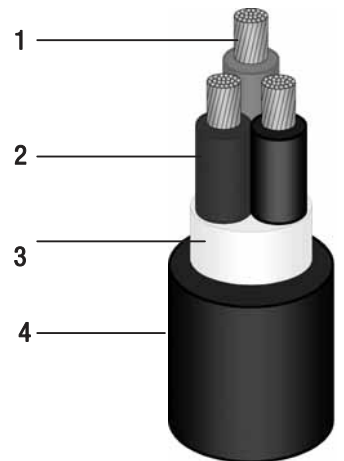
- Material:** Cross-linked polyethylene (XLPE), in accordance with IEC 60092-351.
Identification: 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue (3x); or brown, blue and yellow-green (3G). / 4 conds: 2 black, brown, blue.
 / ≥ 5 conds: numbered black.

FILLING (3)

- Material:** As appropriate (when applicable).

COVERING (4)

- Material:** ST2 type PVC thermoplastic, in accordance with IEC 60092-359.
Colour: Black.
Marking: PRYSMIAN RETENAX NAU RV-K 0.6/1 kV, [section], [year manufactured], IEC 60092-353, IEC 60332-3/A, [corresponding length].



USES

Power cable for fixed installation in ships

RETENAX NAU RV-K 0.6/1 kV

Rated voltage: **0.6/1 kV**

Design standard: **IEC 60092-353**

TECHNICAL SPECIFICATIONS

Code	Number of conductors x section mm ²	Nominal Exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Resistance of conductor 20 °C - c.c. $\mu\Omega$ /km	Maximum I** 45 °C (ambient T) 50 Hz A
40011021	1 x 10	7.5	30	130	0.3087	1.910	67
40011022	1 x 16	8.6	34	190	0.2894	1.210	91
40011023	1 x 25	10.4	42	280	0.2856	0.780	120
40011024	1 x 35	11.9	48	390	0.2703	0.554	148
40011025	1 x 50	13.8	55	550	0.2652	0.386	184
40011026	1 x 70	15.5	62	740	0.2628	0.272	228
40011027	1 x 95	17.0	68	960	0.2548	0.206	276
40011028	1 x 120	18.7	75	1190	0.2538	0.161	319
40011029	1 x 150	21.0	84	1470	0.2530	0.129	367
40011030	1 x 185	23.5	94	1840	0.2495	0.106	418
40011031	1 x 240	26.5	159	2350	0.2457	0.080	492
40011032	1 x 300	29.1	175	3020	0.2434	0.064	565
20063484	2 x 1,5	7.9	31	100	0.3183	13.300	18
20063485	2 x 2,5	9.0	36	130	0.2953	7.980	24
20063486	2 x 4	9.9	40	170	0.2791	4.950	32
40010983	2 x 6	11.0	44	230	0.2648	3.300	42
40010982	2 x 10	13.4	54	350	0.2469	1.910	57
40010984	2 x 16	16.1	65	550	0.2363	1.210	77
40010985	2 x 25	19.8	79	840	0.2381	0.780	102
20063487	3 x 1,5	8.3	33	110	0.3183	13.300	15
20063488	3 x 2,5	9.5	38	160	0.2953	7.980	20
20063489	3 x 4	10.5	42	210	0.2791	4.950	27
20063490	3 x 6	11.9	48	280	0.2648	3.300	34
40010988	3 x 10	14.3	57	430	0.2469	1.910	47
40010989	3 x 16	17.2	69	670	0.2363	1.210	64
40010990	3 x 25	21.3	85	1040	0.2381	0.780	84
40010991	3 x 35	24.7	99	1430	0.2295	0.554	104
40010992	3 x 50	28.6	171	2020	0.2270	0.386	124
40010993	3 x 70	32.1	193	2710	0.2260	0.272	160
40010994	3 x 95	35.8	215	3510	0.2216	0.206	193
40010995	3 x 120	39.2	235	4310	0.2213	0.161	223
40010996	3 x 150	44.2	265	5390	0.2223	0.129	257
40010997	3 x 185	50.3	302	6830	0.2223	0.106	293
20030346	3 G 1,5	8.3	33	110	0.3183	13.300	18
20030345	3 G 2,5	9.5	38	160	0.2953	7.980	24
20030344	3 G 4	10.5	42	210	0.2791	4.950	32
20030343	3 G 6	11.9	48	280	0.2648	3.300	42
20030341	3 G 10	14.3	57	430	0.2469	1.910	57
20030342	3 G 16	17.2	69	670	0.2363	1.210	77
40010998	4 x 1,5	9.3	37	140	0.3183	13.300	15
40010999	4 x 2,5	10.4	42	190	0.2953	7.980	20
40011000	4 x 4	11.7	47	260	0.2791	4.950	27
40011001	4 x 6	13.1	52	350	0.2648	3.300	34
40011002	4 x 10	16.0	64	540	0.2469	1.910	47
40011003	4 x 16	19.3	77	850	0.2363	1.210	64
40011004	4 x 25	23.4	94	1290	0.2381	0.780	84

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

MV POWER CABLES

AFUMEX NAU DHA1 6/10 kV, 8.7/15 kV, 12/20 kV (single-pole)

Rated voltage: **6/10 kV – 8.7/15 kV - 12/20 kV**

Design standard: **IEC 60092-354**



CABLE SPECIFICATIONS



IEC 60332-1
flame retardant



IEC 60332-3 fire
retardant



IEC 61034-1/-2 Low
opaque smoke
emission



IEC 60754-1 Halogen-
free



IEC 60754-2 Low
corrosive gases
emission



NFC 20454 Reduced
toxic-gas emission



Cold resistant



Water absorption
resistance

- Design standard: IEC 60092-354
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 6/10 kV, 8.7/15 kV, 12/20 kV

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

Metal: Bare annealed electrolytic copper.

Flexibility: Rigid class 2 (flexible class 5 if required) in accordance with IEC 60228.

Maximum conductor temperature: 85°C for permanent operation, 250°C for short circuit.

INTERNAL SEMICONDUCTOR (2)

Material: Mixed extruded semiconductor.

INSULATION (3)

Material: EPR (ethylene propylene rubber), in accordance with IEC 60092-351.

EXTERNAL SEMICONDUCTOR (4)

Material: Mixed extruded semiconductor.

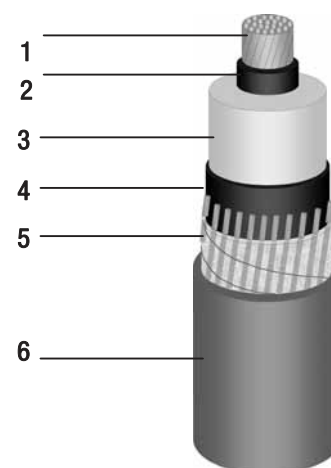
METALLIC SCREEN (5)

Bare copper wire with cross-wound copper band (16 mm² section).

COVERING (6)

Material: Halogen-free extruded mix (LSOH), of type SHF2, in accordance with IEC 60092-359.

Colour: Red.



USES

MV cable for power circuits. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke and gases poses a threat to people and/or equipment.

AFUMEX NAU DHA1 6/10 kV, 8.7/15 kV, 12/20 kV (three-pole)

Rated voltage: **6/10 kV – 8.7/15 kV - 12/20 kV**

Design standard: **IEC 60092-354**



CABLE SPECIFICATIONS



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Cold resistant



Water absorption resistance

- Design standard: IEC 60092-354
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 6/10 kV, 8.7/15 kV, 12/20 kV

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

Metal: Bare annealed electrolytic copper.

Flexibility: Rigid class 2 (flexible class 5 if required) in accordance with IEC 60228.

Maximum conductor temperature: 85°C for permanent operation, 250°C for short circuit.

INTERNAL SEMICONDUCTOR (2)

Material: Mixed extruded semiconductor.

INSULATION (3)

Material: EPR (ethylene propylene rubber), in accordance with IEC 60092-351.

EXTERNAL SEMICONDUCTOR (4)

Material: Mixed extruded semiconductor.

METALLIC SCREEN (5)

Helical bare copper band with overlay.

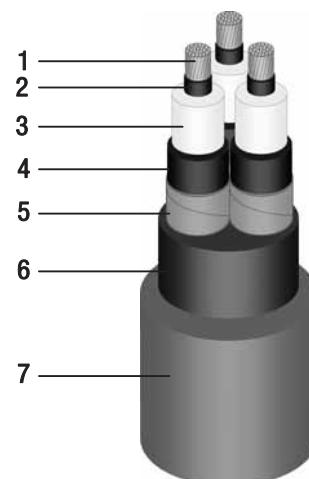
FILLING (6)

Material: Extruded halogen free mix (LSOH), (if required).

OUTER COVERING (7)

Material: Halogen-free extruded mix (LSOH), of type SHF2, in accordance with IEC 60092-359.

Colour: Red



USES

MV cable for power circuits. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke and gases poses a threat to people and/or equipment.

AFUMEX NAU DHA1TCUA1 6/10 kV, 8.7/15 kV, 12/20 kV (single-pole)

Rated voltage: **6/10 kV – 8.7/15 kV - 12/20 kV**

Design standard: **IEC 60092-354**



CABLE SPECIFICATIONS



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Cold resistant



Water absorption resistance

- Design standard: IEC 60092-354
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 6/10 kV, 8.7/15 kV, 12/20 kV

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper.
- Flexibility:** Rigid class 2 (flexible class 5 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INTERNAL SEMICONDUCTOR (2)

Material: Mixed extruded semiconductor.

INSULATION (3)

Material: EPR (ethylene propylene rubber), in accordance with IEC 60092-351.

EXTERNAL SEMICONDUCTOR (4)

Material: Mixed extruded semiconductor.

METALLIC SCREEN (5)

Bare copper wire with cross-wound copper band (16 mm² section).

INNER COVERING (6)

Material: Halogen-free extruded mix (LSOH), of type SHF2, in accordance with IEC 60092-359.

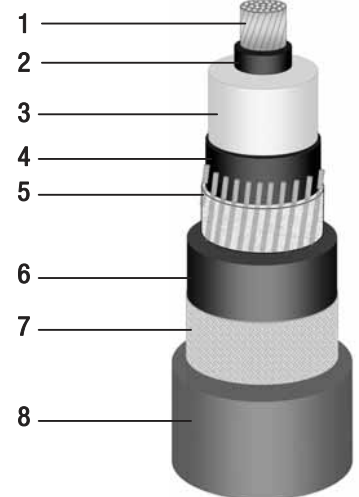
ARMOUR (7)

Bare copper wire braid.

OUTER COVERING (8)

Material: Halogen-free extruded mix (LSOH), of type SHF2, in accordance with IEC 60092-359.

Colour: Red



USES

MV cable for power circuits. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships, where additional protection is required against mechanical action. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke and gases poses a threat to people and/or equipment.

AFUMEX NAU DHA1TCUA1 6/10 kV, 8.7/15 kV, 12/20 kV (three-pole)

Rated voltage: **6/10 kV – 8.7/15 kV - 12/20 kV**

Design standard: **IEC 60092-354**



CABLE SPECIFICATIONS



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Cold resistant



Water absorption resistance

- Design standard: IEC 60092-354
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 6/10 kV, 8.7/15 kV, 12/20 kV

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

Metal: Bare annealed electrolytic copper.

Flexibility: Rigid class 2 (flexible class 5 if required) in accordance with IEC 60228.

Maximum conductor temperature: 85°C for permanent operation, 250°C for short circuit.

INTERNAL SEMICONDUCTOR (2)

Material: Mixed extruded semiconductor.

INSULATION (3)

Material: EPR (ethylene propylene rubber), in accordance with IEC 60092-351.

EXTERNAL SEMICONDUCTOR (4)

Material: Mixed extruded semiconductor.

METALLIC SCREEN (5)

Helical bare copper band with overlay.

INNER COVERING (6)

Material: Halogen-free extruded mix (LSOH), of type SHF2, in accordance with IEC 60092-359.

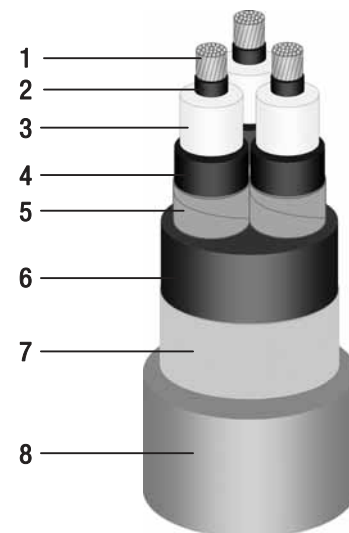
ARMOUR (7)

Bare copper wire braid.

OUTER COVERING (8)

Material: Halogen-free extruded mix (LSOH), of type SHF2, in accordance with IEC 60092-359.

Colour: Red



USES

MV cable for power circuits. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships, where additional protection is required against mechanical action. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke and gases poses a threat to people and/or equipment.

CONTROL SYSTEM CABLES

AFUMEX NAU XA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Water absorption resistance



Cold resistant



Resistance to ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

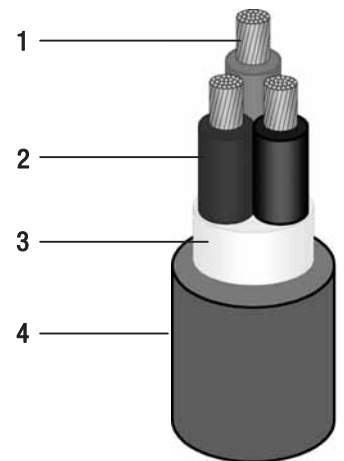
- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue.
4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

- Material:** Halogen free suitable (when required).

COVERING (4)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX NAU XA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, [corresponding length].



USES

Cable for operating pump motors and their control signals, ventilators etc., alarm signals or digital indications, signals of operations between equipment, etc. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XA 250 V

 Rated voltage: **150/250 V**

 Design standard **IEC 60092-376**


TECHNICAL SPECIFICATIONS

Code	Number of conductors x section mm ²	Nominal Exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Resistance of conductor 20 °C - c.c. \wedge /km	Maximum I** 45 °C (ambient T) 50 Hz A
20064346	2 x 1,5	7.5	30	80	0.3042	13.300	18
20070457	2 x 2,5	8.4	34	110	0.2831	7.980	24
20064348	4 x 1,5	8.9	35	120	0.3042	13.300	15
20070458	4 x 2,5	10.0	40	170	0.2831	7.980	20
20064349	7 x 1,5	10.5	42	180	0.3042	13.300	15
20070459	7 x 2,5	12.0	48	260	0.2831	7.980	20
20064350	10 x 1,5	13.4	54	250	0.3042	13.300	15
20070460	10 x 2,5	15.4	62	370	0.2831	7.980	20
20064351	12 x 1,5	13.8	55	290	0.3042	13.300	15
20070461	12 x 2,5	15.9	64	420	0.2831	7.980	20
20064352	16 x 1,5	15.5	62	380	0.3042	13.300	15
20070462	16 x 2,5	17.8	71	550	0.2831	7.980	20
20064353	19 x 1,5	16.3	65	430	0.3042	13.300	15
20070463	19 x 2,5	18.8	75	630	0.2831	7.980	20
20064354	24 x 1,5	19.2	77	540	0.3042	13.300	15
20070464	24 x 2,5	22.1	89	790	0.2831	7.980	20

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

AFUMEX NAU XTCUA 250 V (multi-pole)

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Water absorption resistance



Cold resistant



Resistance to ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue.
4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

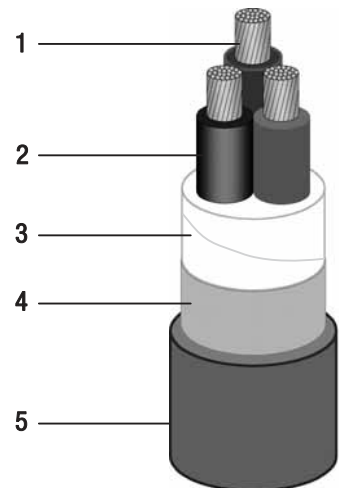
Polyester bands.

SCREEN/ARMOUR (4)

Bare copper wire braid (tinned if required).

COVERING (5)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** AFUMEX NAU XTCUA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, [corresponding length].



USES

Cables for alarms or display for analogical signs, signals of handling operations between equipment required by the equipment supplier. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XTCUA 250 V (multi-pole)

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x	Nominal Ø under armour* mm	Nominal exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Conductor resistance 20 °C - c.c. Ω /km	Maximum I** 45 °C (ambient T) 50 Hz A
20064356	2 x 1,5	5.6	8.6	52	120	0.3059	13.300	18
20070534	2 x 2,5	6.5	9.5	57	140	0.2824	7.980	24
20064358	4 x 1,5	6.8	9.8	59	170	0.3059	13.300	15
20070535	4 x 2,5	7.9	11.1	67	220	0.2824	7.980	20
20064359	7 x 1,5	8.4	11.6	70	240	0.3059	13.300	15
20070536	7 x 2,5	9.7	12.9	77	320	0.2824	7.980	20
20064360	10 x 1,5	11.1	14.9	89	380	0.3059	13.300	15
20070537	10 x 2,5	12.9	16.9	101	510	0.2824	7.980	20
20064860	12 x 1,5	11.5	15.3	92	410	0.3059	13.300	15
20070538	12 x 2,5	13.4	17.4	104	560	0.2824	7.980	20
20064361	16 x 1,5	13.0	17.0	102	510	0.3059	13.300	15
20070539	16 x 2,5	15.1	19.3	116	710	0.2824	7.980	20
20071406	19 x 1,5	13.8	17.8	107	580	0.3042	13.300	15
20070541	19 x 2,5	16.1	20.3	122	800	0.2824	7.980	20
20064362	24 x 1,5	16.6	20.8	125	710	0.3059	13.300	15
20070542	24 x 2,5	19.3	23.7	142	990	0.2824	7.980	20

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

AFUMEX FIRS NAU XA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



IEC 60331 Fire resistance



Water absorption resistance



Cold resistant

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V



Resistance to ultraviolet rays

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance:** **IEC 60331**
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

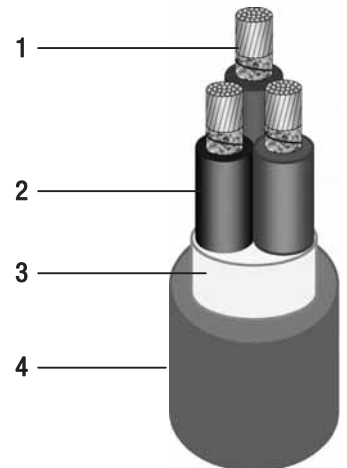
- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue.
4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

- Material:** Halogen free suitable (when required).

COVERING (4)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Cable for control circuits which the ship's classification societies require to function in case of fire, such as emergency fire fighting pumps, sprinkler pumps, sprinklers, locally applied fire extinction, watertight doors, fire doors, fire detection system and general alarm, public address system and low location lighting. **Fire resistant**, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

AFUMEX FIRS NAU XA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x section mm ²	Nominal Exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Resistance of conductor 20 °C - c.c. Ω /km	Maximum I** 45 °C (ambient T) 50 Hz A
20064334	2 x 1,5	8.9	36	100	0.3503	13.300	18
20070449	2 x 2,5	10.0	40	130	0.3224	7.980	24
20064338	4 x 1,5	10.6	42	150	0.3503	13.300	15
20070450	4 x 2,5	11.6	46	200	0.3224	7.980	20
20064339	7 x 1,5	12.8	51	230	0.3503	13.300	15
20070451	7 x 2,5	14.1	56	310	0.3224	7.980	20
20064340	10 x 1,5	16.4	66	320	0.3503	13.300	15
20070452	10 x 2,5	18.1	73	430	0.3224	7.980	20
20064341	12 x 1,5	17.0	68	370	0.3503	13.300	15
20070453	12 x 2,5	19.0	76	500	0.3224	7.980	20
20064342	16 x 1,5	19.0	76	470	0.3503	13.300	15
20070454	16 x 2,5	21.0	84	640	0.3224	7.980	20
20064343	19 x 1,5	20.1	80	540	0.3503	13.300	15
20070455	19 x 2,5	22.4	90	750	0.3224	7.980	20
20064344	24 x 1,5	23.7	95	670	0.3503	13.300	15
20070456	24 x 2,5	26.5	159	940	0.3224	7.980	20

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005) Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

AFUMEX FIRS NAU XTCUA 250 V (multi-pole)

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



IEC 60331 Fire resistance



Water absorption resistance



Cold resistant

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Fire resistance: IEC 60331
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2



Resistance to ultraviolet rays

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Identification:** 1 cond: black. / 2 conds: black and blue. / 3 conds: black, brown and blue. / 4 conds: 2 black, brown, blue. / ≥ 5 conds: numbered black.

FILLING (3)

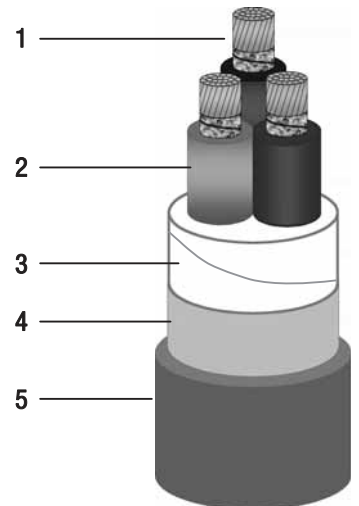
Polyester bands.

SCREEN/ARMOUR (4)

Bare copper wire braid (tinned if required).

COVERING (5)

- Material:** Afumex SHF1 type thermoplastic in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XTCUA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Cable for control circuits which the ship's classification societies require to function in case of fire, such as emergency fire fighting pumps, sprinkler pumps, sprinklers, locally applied fire extinction, watertight doors, fire doors, fire detection system and general alarm, public address system and low location lighting. **Fire resistant**, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

AFUMEX FIRS NAU XTCUA 250 V (multi-pole)

Rated voltage: **150/250 V**Design standard: **IEC 60092-376**

TECHNICAL SPECIFICATIONS

Code	Number of conductors x	Nominal Ø under armour* mm	Nominal exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Inductance mH/km	Conductor resistance 20 °C - c.c. Ω /km	Maximum I** 45 °C (ambient T) 50 Hz A
20070545	2 x 1,5	7.1	10.1	61	140	0.3520	13.300	18
20070548	2 x 2,5	7.9	10.9	65	170	0.3219	7.980	24
20070549	4 x 1,5	8.5	11.7	70	210	0.3520	13.300	15
20070550	4 x 2,5	9.5	12.7	76	260	0.3219	7.980	20
20070551	7 x 1,5	10.5	13.7	82	300	0.3520	13.300	15
20070552	7 x 2,5	11.8	15.6	94	430	0.3219	7.980	20
20070553	10 x 1,5	14	18	108	480	0.3520	13.300	15
20070554	10 x 2,5	15.7	19.7	118	610	0.3219	7.980	20
20070555	12 x 1,5	14.5	18.5	111	520	0.3520	13.300	15
20070556	12 x 2,5	16.3	20.5	123	670	0.3219	7.980	20
20070557	16 x 1,5	16.4	20.6	124	640	0.3520	13.300	15
20070558	16 x 2,5	18.4	22.6	136	830	0.3219	7.980	20
20070559	19 x 1,5	17.4	21.6	130	710	0.3520	13.300	15
20070560	19 x 2,5	19.5	23.9	143	940	0.3219	7.980	20
20070561	24 x 1,5	20.8	25.3	152	890	0.3520	13.300	15
20070562	24 x 2,5	23.4	27.98	168	1170	0.3219	7.980	20

* Values subject to manufacturing tolerances.

** In accordance with IEC 60092-352 (2005), Annex B, maximum temperature of the conductor 85 °C (the cable can support up to 90 °C).

INSTRUMENTATION SYSTEM CABLES

AFUMEX NAU XOA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Water absorption resistance



Cold resistant



Resistance to ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

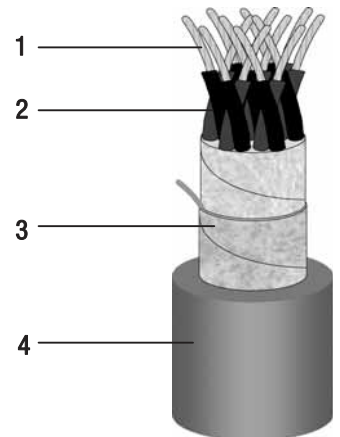
- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN (3)

Aluminium/polyester band collective screen with tinned copper class 5 drain conductor.

COVERING (4)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX NAU XOA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XOA 250 V

Rated voltage: **150/250 V**

Design standard **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x 2 x section mm ²	Nominal exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Conductor resistance 20 °C - c.c. Ω/km	Inductance mH/km	Approximate mutual capacity nF/km
20064385	2 x 2 x 0,75	8.4	33	90	26	0.6388	65
20064386	4 x 2 x 0,75	10.9	44	150	26	0.6388	65
20064387	7 x 2 x 0,75	13.8	55	230	26	0.6388	65
20064388	10 x 2 x 0,75	16.4	66	310	26	0.6388	65
20070607	12 x 2 x 0,75	17.7	71	360	26	0.6388	65
20064389	14 x 2 x 0,75	18.9	75	410	26	0.6388	65
20064390	19 x 2 x 0,75	21.7	87	530	26	0.6388	65
20070608	24 x 2 x 0,75	24.2	97	660	26	0.6388	65

* Values subject to manufacturing tolerances.

AFUMEX NAU XHA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Water absorption resistance



Cold resistant



Resistance to ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

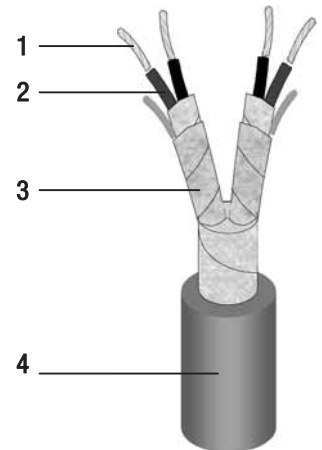
- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN (3)

Aluminium/polyester band individual screen with tinned copper class 5 drain conductor.

COVERING (4)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX NAU XHA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XHA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x 2 x section mm ²	Nominal exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Conductor resistance 20 °C - c.c. \wedge /km	Inductance mH/km	Approximate mutual capacity nF/km
20070609	1 x 2 x 0,75	6.3	25	50	26	0.6388	115

* Values subject to manufacturing tolerances.

AFUMEX NAU XHOA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Water absorption resistance



Cold resistant



Resistance to ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

INDIVIDUAL SCREEN (3)

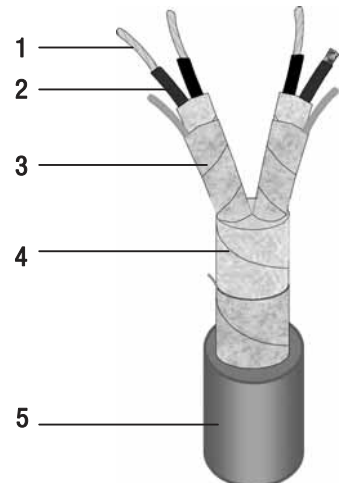
Aluminium/polyester band with tinned copper class 5 drain conductor.

COLLECTIVE SCREEN (4)

Aluminium/polyester band with tinned copper class 5 drain conductor.

COVERING (5)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX NAU XHOA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XHOA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x 2 x section mm ²	Nominal exterior \varnothing^* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Resistance of conductor 20 °C - c.c. Ω /km	Inductance mH/km	Approximate mutual capacity nF/km
20070610	2 x 2 x 0,75	8.5	34	130	26	0.6388	115
20070611	4 x 2 x 0,75	11.3	45	190	26	0.6388	115
20070612	7 x 2 x 0,75	14.3	57	290	26	0.6388	115
20070613	10 x 2 x 0,75	16.7	67	400	26	0.6388	115
20070614	12 x 2 x 0,75	18.0	72	460	26	0.6388	115
20070615	14 x 2 x 0,75	19.4	78	530	26	0.6388	115
20070616	19 x 2 x 0,75	22.0	88	680	26	0.6388	115
20070617	24 x 2 x 0,75	24.8	99	860	26	0.6388	115

* Values subject to manufacturing tolerances.

AFUMEX NAU XTCUA 250 V (pairs)

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Water absorption resistance



Cold resistant



Resistance to ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN/ARMOUR FILLING (3)

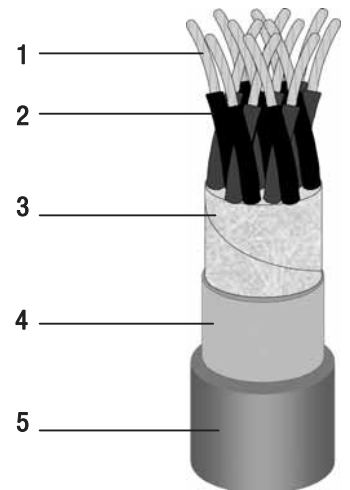
Polyester band.

SCREEN / ARMOUR (4)

Bare copper wire braid (tinned if required).

COVERING (5)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX NAU XTCUA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XTCUA 250 V (pairs)

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x 2 x section mm ²	Nominal Ø under armour* mm	Nominal exterior Ø* mm	Minimum radius of curvature mm	Approximate weight* kg/km	Conductor resistance 20 °C - c.c. Ω/km	Inductance mH/km	Approximate mutual capacity nF/km
20064377	2 x 2 x 0,75	5.5	8.5	51	120	26	0.6388	80
20064378	4 x 2 x 0,75	7.8	11.0	66	190	26	0.6388	80
20064379	7 x 2 x 0,75	10.3	14.1	85	320	26	0.6388	80
20070575	10 x 2 x 0,75	12.3	16.3	98	410	26	0.6388	80
20070594	12 x 2 x 0,75	13.5	17.5	105	470	26	0.6388	80
20064380	14 x 2 x 0,75	14.5	18.7	112	530	26	0.6388	80
20070577	19 x 2 x 0,75	16.9	21.1	126	650	26	0.6388	80
20070595	24 x 2 x 0,75	20.6	25.2	151	840	26	0.6388	80

* Values subject to manufacturing tolerances.

AFUMEX NAU XHTCUA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1 flame retardant



IEC 60332-3 fire retardant



IEC 61034-1/-2 Low opaque smoke emission



IEC 60754-1 Halogen-free



IEC 60754-2 Low corrosive gases emission



NFC 20454 Reduced toxic-gas emission



Water absorption resistance



Cold resistant



Resistance to ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351.
- Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN (3)

Aluminium/polyester band individual screen with tinned copper class 5 drain conductor.

SCREEN/ARMOUR FILLING (4)

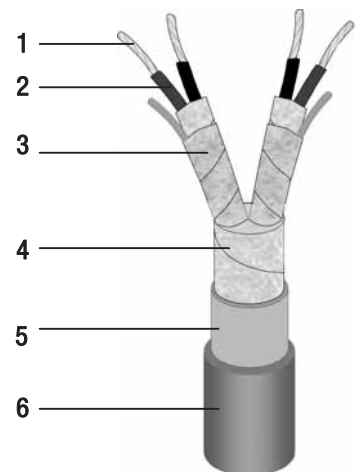
Polyester bands.

SCREEN / ARMOUR (5)

Bare copper braid (tinned if required).

COVERING (6)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour: Grey.
- Marking:** PRYSMIAN AFUMEX NAU XHTCUA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Especially suitable in areas with bad ventilation and in places where, in case of fire, the presence of toxic and corrosive smoke poses a threat to people and/or equipment.

AFUMEX NAU XHTCUA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x 2 x section mm ²	Nominal \emptyset under armour*	Nominal exterior \emptyset *	Minimum radius of curvature	Approximate weight*	Conductor resistance 20 °C - c.c. Ω /km	Inductance mH/km	Approximate mutual capacity nF/km
20060611	2 x 2 x 0,75	6.2	9.4	57	150	26	0.639	115
20060612	4 x 2 x 0,75	8.8	12.0	72	220	26	0.639	115
20060613	7 x 2 x 0,75	11.6	15.4	93	370	26	0.639	115
20070578	10 x 2 x 0,75	13.9	18.1	108	500	26	0.639	115
20070596	12 x 2 x 0,75	15.2	19.4	116	570	26	0.639	115
20070579	14 x 2 x 0,75	16.2	20.6	123	640	26	0.639	115
20070580	19 x 2 x 0,75	19.0	23.4	141	810	26	0.639	115
20070597	24 x 2 x 0,75	21.4	26.0	156	980	26	0.639	115

* Values subject to manufacturing tolerances.

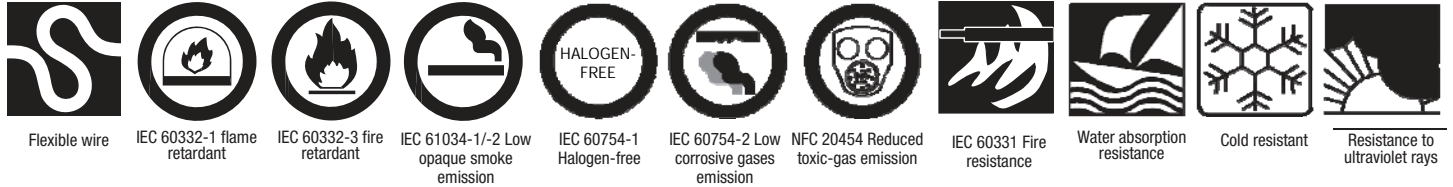
AFUMEX FIRS NAU XOA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance: IEC 60331**
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

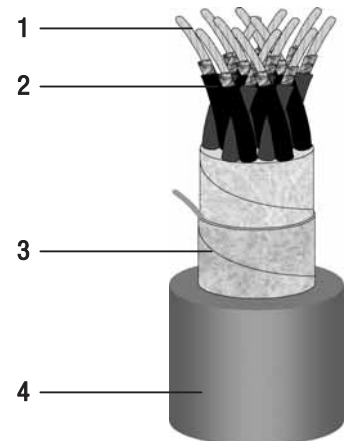
- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN (3)

Aluminium/polyester band collective screen with tinned copper class 5 drain conductor.

COVERING (4)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XOA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. **Fire resistance:** Halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

AFUMEX FIRS NAU XHA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



Flexible wire



IEC 60332-1
flame
retardant



IEC 60332-3
fire
retardant



IEC 61034-1/-2
Low opaque
smoke emission



IEC 60754-1
Halogen-free



IEC 60754-2 Low
corrosive gases
emission



NFC 20454
Reduced toxic-gas
emission



IEC 60331 Fire
resistance



Water absorption
resistance



Cold resistant



Resistance to
ultraviolet rays

- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance: IEC 60331**
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

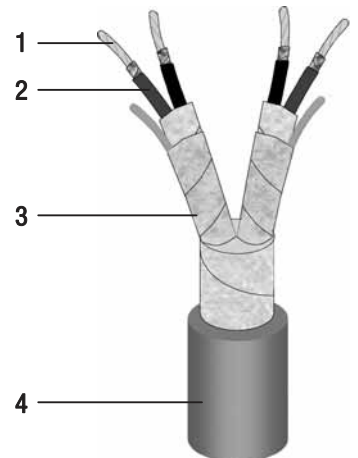
- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN (3)

Aluminium/polyester band individual screen with tinned copper class 5 drain conductor.

COVERING (4)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XHA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Fire resistant, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

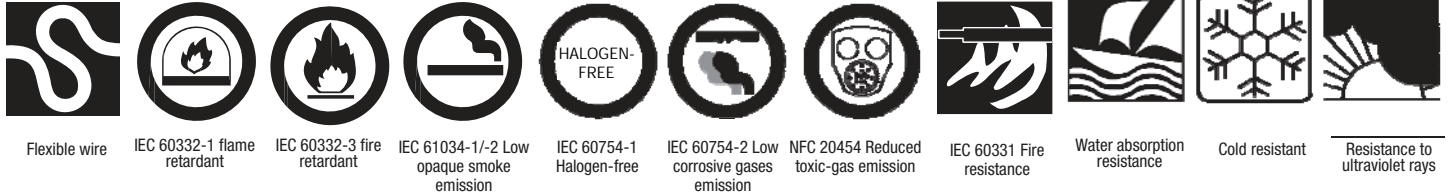
AFUMEX FIRS NAU XHOA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance: IEC 60331**
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

INDIVIDUAL SCREEN (3)

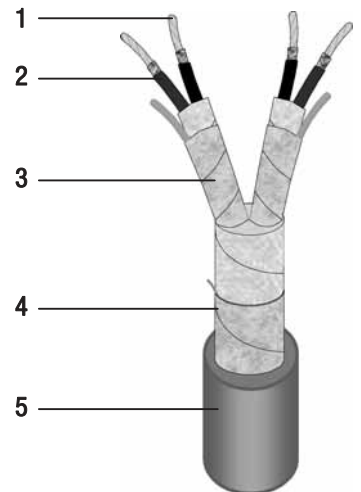
Aluminium/polyester band with tinned copper class 5 drain conductor.

COLLECTIVE SCREEN (4)

Aluminium/polyester band with tinned copper class 5 drain conductor.

COVERING (5)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XHOA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. **Fire resistant**, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

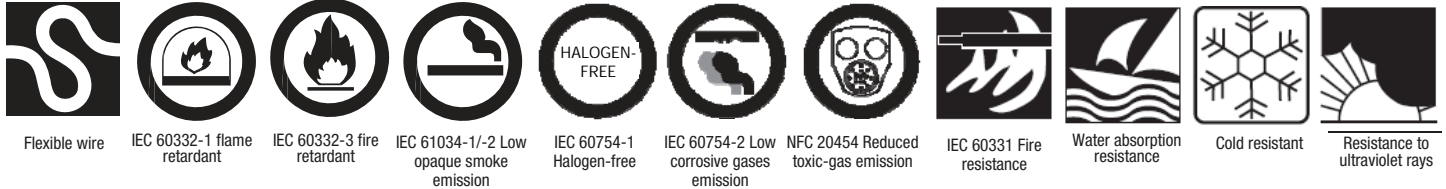
AFUMEX FIRS NAU XTCUA 250 V (pairs)

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance: IEC 60331**
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN/ARMOUR FILLING (3)

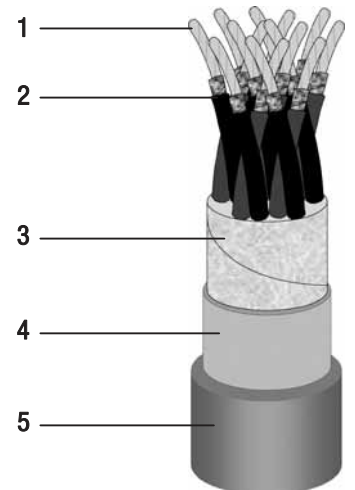
Polyester band.

SCREEN / ARMOUR (4)

Bare copper wire braid (tinned if required).

COVERING (5)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XTCUA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Fire resistant, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

AFUMEX FIRS NAU XTCUA 250 V (pairs)

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



TECHNICAL SPECIFICATIONS

Code	Number of conductors x 2 x section mm ²	Nominal Ø under armour*	Nominal exterior Ø*	Minimum radius of curvature	Approximate weight*	Conductor resistance 20 °C - c.c. Ω /km	Inductance mH/km	Approximate mutual capacity nF/km
20060463	2 x 2 x 0,75	7.4	10.6	63	160	26	0.7504	100
20060464	4 x 2 x 0,75	10.4	14.2	85	300	26	0.7504	100
20070581	7 x 2 x 0,75	13.7	17.7	106	440	26	0.7504	100
20070582	10 x 2 x 0,75	16.3	20.5	123	560	26	0.7504	100
20070592	12 x 2 x 0,75	17.8	22.0	132	640	26	0.7504	100
20070583	14 x 2 x 0,75	19.2	23.6	142	720	26	0.7504	100
20070584	19 x 2 x 0,75	22.3	26.9	162	920	26	0.7504	100
20070593	24 x 2 x 0,75	27.2	32.0	192	1140	26	0.7504	100

* Values subject to manufacturing tolerances.

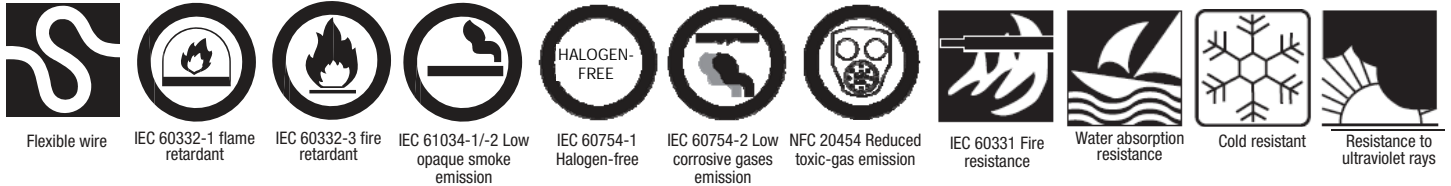
AFUMEX FIRS NAU XHTCUA 250 V

Rated voltage: **150/250 V**

Design standard: **IEC 60092-376**



CABLE SPECIFICATIONS



- Design standard: IEC 60092-376
- Operating temperature (permanent installation): -25 +85 °C
- Rated voltage: 150/250 V
- 5-minute AC voltage test: 1500 V

Fire tests:

- Flame retardancy: IEC 60332-1
- Fire retardancy: IEC 60332-3 Cat. A
- **Fire resistance: IEC 60331**
- Halogen-free: IEC 60754-1
- Low corrosive gas emission: IEC 60754-2
- Low opaque smoke emission: IEC 61034-1/-2

DESCRIPTION

CONDUCTOR (1)

- Metal:** Bare annealed electrolytic copper (tinned if required).
- Flexibility:** Flexible class 5 (rigid class 2 if required) in accordance with IEC 60228.
- Maximum conductor temperature:** 85°C for permanent operation, 250°C for short circuit.

INSULATION (2)

- Material:** Mica tape + Cross-linked halogen-free polyethylene (HF XLPE), in accordance with IEC 60092-351. Gathered in pairs or threes.
- Identification:** Pairs: black and blue numbered. / Threes: black-blue-brown numbered.

SCREEN (3)

Aluminium/polyester band individual screen with tinned copper class 5 drain conductor.

SCREEN/ARMOUR FILLING (4)

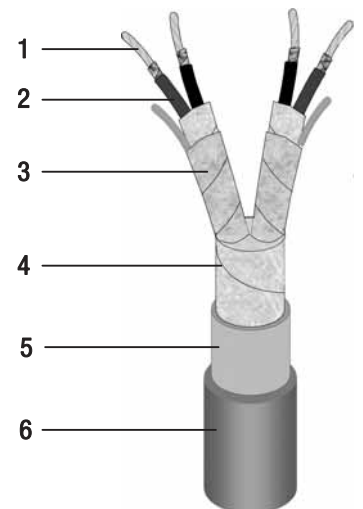
Polyester bands.

SCREEN / ARMOUR (5)

Bare copper braid (tinned if required).

COVERING (6)

- Material:** Afumex halogen-free SHF1 type thermoplastic, in accordance with IEC 60092-359.
- Colour:** Grey.
- Marking:** PRYSMIAN AFUMEX FIRS NAU XHTCUA 250 V, [section], [year manufactured], IEC 60092-376, IEC 60332-3/A, IEC 60331, [corresponding length].



USES

Instrumentation cable according to equipment supplier's requirements. Fire resistant, halogen-free, fire retardant, with low opaque smoke emission and low toxic and corrosive gas emission for fixed installation in ships. Specially designed to guarantee power supply to security services in case of fire (750 °C for 90 minutes, in compliance with IEC 60331-21).

PACKING

PACKING

Guideline table of packing depending on outer diameter of cable. Not applicable to cables in pairs, threes or fours. Always check the maximum weight supported by the reel (in the last row of the table) and the minimum radius of curvature (see further below).

CAPACITY REELS BY CABLE DIAMETER

Reel type ≈∅ Cable mm	Z	R	S	T	3	4/12P	F	5	6	H	7/18P	8	D/21P
6	1936	3257											
7	1422	2393											
8	1089	1832	3428										
9	860	1448	2708										
10	697	1173	2194										
11	576	969	1813		2270								
12	484	814	1523	2685	1907								
13	412	694	1298	2288	1625								
14	356	598	1119	1972	1401	2315							
15	310	521	975	1718	1221	2017							
16	272	458	857	1510	1073	1773	2581						
17	241	406	759	1338	950	1570	2286						
18	215	362	677	1193	848	1401	2039						
19	193	325	608	1071	761	1257	1830	1961	3010				
20	174	293	548	966	687	1135	1652	1770	2717				
21	158	266	497	877	623	1029	1498	1605	2464				
22	144	242	453	799	567	938	1365	1463	2245				
23	132	222	415	731	519	858	1249	1338	2054				
24	121	204	381	671	477	788	1147	1229	1887	2237			
25	111	188	351	619	439	726	1057	1133	1739	2062			
26	103	173	325	572	406	671	977	1047	1608	1906	2060		
27	96	161	301	530	377	623	906	971	1491	1768	1910	2034	
28	89	150	280	493	350	579	843	903	1386	1644	1776	1891	2646
29	83	139	261	460	327	540	786	842	1292	1532	1656	1763	2466
30	77	130	244	430	305	504	734	787	1207	1432	1547	1647	2305
31	73	122	228	402	286	472	688	737	1131	1341	1449	1543	2158
32	68	115	214	378	268	443	645	691	1061	1258	1360	1448	2026
33	64	108	201	355	252	417	607	650	998	1183	1279	1362	1905
34	60	101	190	334	238	393	572	612	940	1115	1204	1283	1794
35	57	96	179	316	224	370	539	578	887	1052	1137	1210	1693
36	54	90	169	298	212	350	510	546	839	994	1074	1144	1601
37	51	86	160	282	201	332	483	517	794	941	1017	1083	1515
38	48	81	152	268	190	314	458	490	753	892	964	1027	1437
39	46	77	144	254	181	298	434	465	714	847	915	975	1364
40	44	73	137	242	172	284	413	442	679	805	870	927	1296
41	41	70	131	230	163	270	393	421	646	767	828	882	1234
42	40	66	124	219	156	257	375	401	616	731	789	841	1176
43	38	63	119	209	149	245	357	383	588	697	753	802	1122

Maximum cable weight (kg)	250	500	500	600	600	1500	1500	2000	2000	3000	3000	4000	4000
A (disc)	630	700	900	1100	1000	1200	1350	1400	1600	1800	1800	2000	2100
B (drum)	300	350	350	400	500	600	500	710	900	950	950	1250	1000
H (shaft)	82	82	82	82	82	88	88	88	88	138	138	138	138
D (ext. width)	400	600	640	700	710	800	800	930	1100	1080	1080	1100	1100

CAPACITY REELS BY CABLE DIAMETER

Reel type ≈∅ Cable	Z	R	S	T	3	4/12P	F	5	6	H	7/18P	8	D/21P
43			119	209	149	245			588	697	753	802	1122
44			113	200	142	234			561	666	719	766	1071
45			108	191	136	224			537	636	688	732	1024
46			104	183	130	214			514	609	658	701	980
47			99	175	124	205			492	583	630	671	939
48			95	168	119	197			472	559	604	644	900
49			91	161	114	189			453	537	580	618	864
50			88	155	110	182			435	515	557	593	830
51			84	149	106	174			418	495	535	570	798
52				143	102	168			402	477	515	548	767
53					98	162			387	459	496	528	738
54					94	156			373	442	477	508	711
55						150			359	426	460	490	686
56									347	411	444	473	661
57									334	397	429	456	638
58									323	383	414	441	617
59									312	370	400	426	596
60									302	358	387	412	576
61									292	346	374	398	557
62									283	335	362	386	540
63									274	325	351	374	523
64									265	315	340	362	506
65									257	305	330	351	491
66									249	296	320	340	476
67									242	287	310	330	462
68									235	279	301	321	449
69									228	271	292	311	436
70									222	263	284	303	423
71									216	256	276	294	411
72									210	249	269	286	400
73									204	242	261	278	389
74									198	235	254	271	379
75									193	229	248	264	369
76									188	223	241	257	359
77									183	217	235	250	350
78									179	212	229	244	341
79									174	206	223	238	332
80									170	201	218	232	324

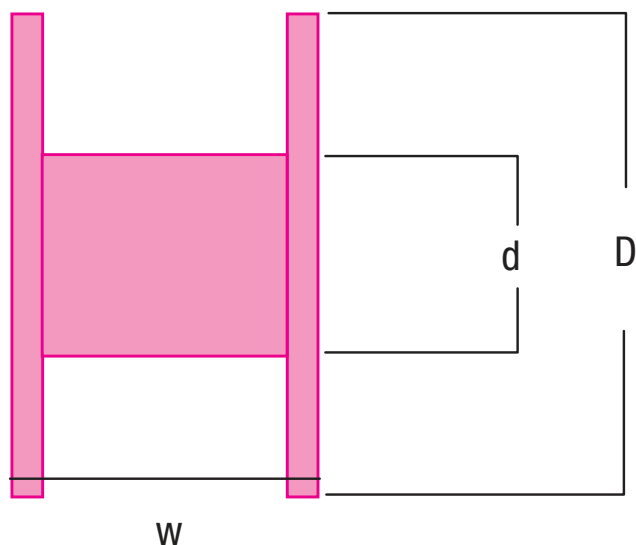
Maximum cable weight (kg)		250	500	600	600	1500		1500	2000	3000	3000	4000	4000
A (disc)			900	1100	1000	1200			1600	1800	1800	2000	2100
B (drum)			350	400	500	600			900	950	950	1250	1000
H (shaft)			82	82	82	88			88	138	138	138	138
D (ext. width)			640	700	710	800			1100	1080	1080	1100	1100

The radius of the reel drum must be greater or equal to the minimum radius of curvature of the cable, the value of which can be obtained as the multiple of the outer diameter (IEC 60092-352).

Cables without armour or screens				Cables with armour and/or screens			
D ≤ 25		D > 25		D ≤ 25		D > 25	
4D		6D		6D			

Where D is the outer diameter of the cable.

MEASUREMENTS, WEIGHTS AND CONDITIONS OF RETURN OF CABLE REELS



CONDITIONS OF RETURN (EMPTY REELS)

If they are returned in good condition within 2 years of issue, PRYSMIAN CABLES Y SISTEMAS, S.L. will refund 70% of the value of their reels to the invoiced party.

There will be no refund for reels returned after 2 years or that are broken or in bad condition.

“NON RETURNABLE” reels (type Z) will not be accepted for return.

To obtain a refund, you must send them by prepaid delivery to the following address:

ARCA, S.A.
 Carretera Vilanova – Igualada km 50,7
 Telephone (+34) 93 893 52 07
 Fax (+34) 93 814 09 21
 Mail: embalajesarca@hotmail.com
 08800 Vilanova i la Geltrú – Barcelona

accompanied by their corresponding delivery note detailing the types and registrations of the returned reels. Staves, if any, will be charged on the invoice and will not be refunded in any case, as they are not reusable material.

TYPE OF REEL	DIMENSIONS			WEIGHT	VOLUME
	D DISC	d DRUM	w EXTERIOR	kg	ORTHOGONAL m ³
R	700	350	600	20	0,3
S	900	350	620	25	0,5
T	1100	400	700	55	0,8
3	1000	500	710	55	0,7
4/12P	1200	600	800	105	1,2
F	1350	500	800	105	1,5
5	1400	710	930	165	1,8
6	1600	900	1100	215	2,8
H	1800	950	1080	295	3,5
7/18P	1800	950	1080	225	3,5
8	2000	1250	1100	340	4,4
D/21P	2100	1000	1100	380	4,9
9 / 22P	2200	1250	1360	505	6,6
A / 25P	2500	1400	1370	670	8,6
V	2700	1500	1600	1010	11,7
Q	2700	1500	2080	1150	15,2
Z	630	300	400	8	0,2

Prysmian Cables y Sistemas, S.L. reserves the right to modify the specifications and other technical data in this catalogue at any time, with no obligations and with no prior warning.

BRANCH OFFICES

BARCELONA

Edificio SCV Forum la Rotonda
Carretera de Sant Cugat a Rubí km 01 nº 40,
Oficina 9 de la 1ª planta
08190 Sant Cugat del Vallés (Barcelona)
Tel. 93 583 06 30 • Fax 93 583 06 31

VALENCIA

Edificio Trevi. Fontaneres, 51, 5ª C
46014 VALENCIA
Tel. 96 357 12 13 / 902 14 60 00
Fax 96 357 14 12

LA CORUÑA

Novoa Santos, 21.
15006 LA CORUÑA
Tel. 981 13 87 35 / 981 13 87 36 /
902 14 60 00 • Fax 981 13 87 50

GRANADA

Sederos, 2, 5º A.
18005 GRANADA
Tel. 958 52 38 92 / 902 14 60 00
Fax 958 26 54 71

CANARY ISLANDS

África, 2.
35212 LAS HUESAS – TELDE (Gran Canaria)
Tel. 928 69 47 54
Fax 928 69 47 66

TELEPHONE SALES

Tel. 902 14 60 06
Fax 93 811 60 01

COMMERCIAL OFFICE

Tel. 93 811 60 00
Fax 93 811 60 01

PRYSMIAN CLUB

Tel. 901 25 50 75

MADRID

Conde de Peñalver, 38, 5ª planta.
28006 MADRID
Tel. 91 402 06 68 / 902 14 60 00
Fax 91 402 78 67

BILBAO

Colón de Larreátegui, 45, 1º dcha.
48011 BILBAO
Tel. 94 424 45 80 / 902 14 60 00
Fax 94 424 45 88

OVIEDO

Fernando Vela, 1, 5º Izquierda, C.
37011 OVIEDO
Tel. 985 11 62 24 • Fax 985 29 01 17

SEVILLE

Carlos de Cepeda, 2, Planta 2ª, módulo 4.
41005 SEVILLE
Tel. 95 463 70 18 / 902 14 60 00
Fax 95 463 60 25

PORTUGAL

R.Nosa Senhora de Fátima, 424, 1ª D.
4050 PORTO – PORTUGAL
Tel. 00 (351) (2) 609 77 77
Fax 00 (351) (2) 609 78 31

CENTRAL OFFICE

Prysmian Cables and Systems
Tel. 93 811 60 00 • Fax 93 811 60 01
e-mail: energia.es@prysmian.com
www.prysmian.es

