



# 6

## Offshore Cables

## Marine Cables

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# (BS6883) General Information

British Standard specification for elastomeric insulated cables for fixed wiring in ships and on mobile and fixed offshore units.

## Introduction

Introduction to the construction and the types of materials specified by BS6883 which deals with cables suitable for offshore installations, ships and hazardous areas.

## Cable Range

### Instrumentation Cable

1. 150/250 V pairs and triples 0.75-1.5mm<sup>2</sup> through to 37pr and 1-12 triples  
Individually Screened  
Collectively Screened  
Unbraided  
Steel or Phosphor Bronze Braided  
N.B. 1.5mm<sup>2</sup> BS6883: 1991 only

### Power & Control Cables

2. 600/1000 V single-core to thirty seven core.  
Unarmoured or steel, phosphor bronze or copper wire braided.
3. 1.9/3.3 kV, 3.3/3.3 kV, 3.8/6.6 kV, 6.6/6.6 kV and 6.35/11 kV un-screened, single and three core Steel or Phosphor bronze braided.
4. 3.8/6.6 kV, 6.35/11 kV and 8.7/15 kV.  
Screened, single and three core.  
Unarmoured or steel, or phosphor bronze wire braided.

## Construction

### Conductors

Stranded metal coated copper conductors complying with BS EN 60228 for Class 2 or Class 5. Anixter can also supply Class 2 flexible on sizes of 6sqmm and above.

### Insulation

Material shall comply with the requirements of BS7655 for type GP4 and shall have Halogen Acid Gas Emission levels equal to, or lower than, that of the sheath material where specified.

### Sheath

Where a cable has both an inner and outer sheath, the class of sheathing material shall be identical (except on FS types).

**Armour**

Single-cores - phosphor bronze wire braid or tinned copper wire braid.

Multicore - galvanised steel wire braid.

The braid on single-core cables intended for use on a.c. circuits shall consist of tinned annealed copper wires or tinned phosphor bronze wires.

Bronze wires to BS EN 12166.

Copper wires to BS EN 13602.

Steel wires to BS EN 10257-1.

**Cable Legend**

The following information shall be printed or embossed on the outer surface of all cables.

- a) The number of the B.S. (where applicable).
- b) Sheath class i.e. Type SW4 (where applicable).
- c) No and c.s.a. of conductors.
- d) Voltage rating.
- e) Manufacturers name.
- f) IEC rating (i.e. IEC 60332-3A).
- g) UK00A Code (where applicable).



# Summary of Materials Used in the Cable Construction

## Conductors

The conductors shall be tinned annealed circular copper conductors complying with BS EN 60228 for Class 2 or BS EN 60228 for Class 5 (up to 1.5mm<sup>2</sup> only). Class 2 flexible on sizes of 6sqmm and above.

## Insulation

Low voltage, HOFR and zero halogen cables are insulated with EPR complying with BS7655 GP4. High voltage (1900/3300 and above) HOFR and zero halogen cables are insulated with EPR complying with BS7655 GP5. Fire survival cables have mica impregnated glass tape(s) beneath an extruded layer or EPR.

## Core Identification

The cores shall be identified either by colours or numbers in accordance with individual cable type requirements.

## Sheathing

Four classes of sheathing material are available (for armoured cables the bedding will be the same class of material as the outer sheath)\*. All are of an elastomeric nature, based generally on the requirements of BS7655 for ordinary duty HOFR type RS3 but with improved characteristics as follows (Anixter only supply SW4):

- SW1 (HOFR) - Enhanced oil resistance (formerly Class A)
- SW2 (HOFR) - Enhanced oil resistance (formerly Class B)
  - Reduced halogen acid gas emission
  - Minimum tear resistance 5.0 N/mm
- SW3 (ZH) - Negligible halogen acid gas emission (formerly Class C)
  - Minimal smoke emission
  - Minimum 150% elongation at break
- SW4 (ZH) - Enhanced oil resistance (formerly Class D)
  - Negligible halogen acid gas emission
  - Minimal smoke emission
  - Minimum 150% elongation at break

A surface-printed legend identifies the cable and its sheath type.

\* On armoured fire-resisting cables, zero halogen bedding must be employed.

# Summary of Materials Used in the Cable Construction

## Armour

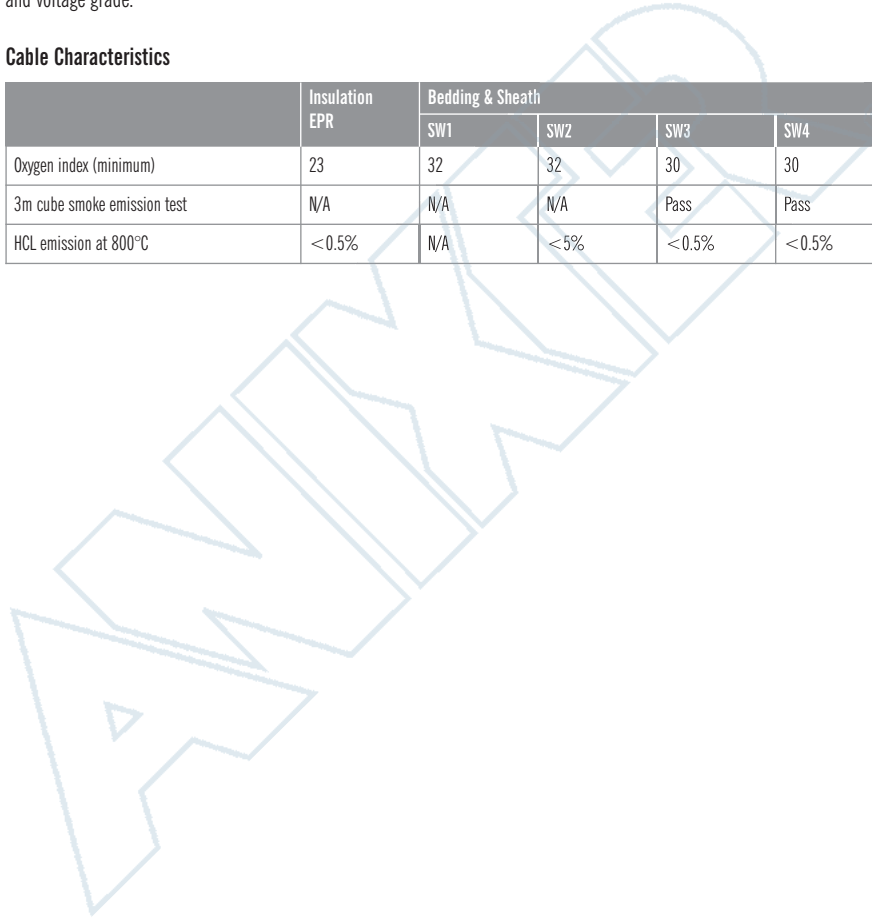
Material for wire braid shall consist of galvanised mild steel, tinned bronze or tinned annealed copper wires. The steel wires shall comply with BS EN 10257-1, the bronze wires with BS EN 12166, and the copper wires with BS EN 13602.

## Cable Marking

A means of identifying the manufacturer shall be provided throughout the length of all cables. This may be done by coloured threads, printed tapes, printing or embossing of the outer surface. If coloured threads are used, the colours shall comply with manufacturers name. The printing or embossing on the outer sheath must include as a minimum the manufacturers name and voltage grade.

## Cable Characteristics

	Insulation EPR	Bedding & Sheath			
		SW1	SW2	SW3	SW4
Oxygen index (minimum)	23	32	32	30	30
3m cube smoke emission test	N/A	N/A	N/A	Pass	Pass
HCL emission at 800°C	<0.5%	N/A	<5%	<0.5%	<0.5%



# Guide to Selection of Cable Sheath Material

The following table compares cable sheathing materials for offshore applications.

Property	CSP	EVA	EVA(X-L)	PVC
Mechanical Properties	V Good	Good	V Good	Good
Oil Resistant	Good	Fair	Good	Good
Water Resistant	Good	Poor	Good	Good
Resistant to Flame Propagation	V Good	V Good	V Good	Fair
Smoke Evolution	Low	V Low	V Low	High
Acid Gas Emission	Low	V Low	V Low	High

## CSP - Chloro-Sulphonated Polyethylene

Gives the best overall balance of properties where flexibility, reduced smoke and reduced HCL emission are required, but with a higher cost than PVC. PVC has acceptable mechanical properties, but improvement in acid gas emission or smoke evolution reduces the other properties.

## EVA - Ethylene-Vinyl Acetate Rubber

Halogen free but still suitable for offshore use. Excellent low smoke and low acid gas evolution characteristics and satisfactory physical properties, good heat and oil resistance. Typically SW4 sheaths are an EVA or EMA based elastomer.

## EVA - Ethylene-Vinyl Acetate Thermoplastic

Halogen free (cross-linked) has very good mechanical properties. Good flame retardancy, low smoke emission and minimal acid gas emission under fire conditions.

## PVC - Polyvinyl Chloride

A well known product recognised for many applications. Developments of PVC, such as flame retardant, reduced acid gas emission, have resulted in PVC compounds that can be used in open areas on offshore installations.

# Guide to Selection of Cable Sheath Material

These products are common in the manufacture of cables used on oil rigs, oil platforms, ships, etc. With the high risk of fire in these environments, the behaviour of cables is of prime importance.

When most standard cables are subjected to flames, the basic effects are no different to any other products manufactured of similar materials.

Generally the following happens:

The flames will gradually spread, smoke and gases will be generated and eventually the cable will breakdown electrically and be severely damaged or destroyed. The resultant effects of these hazards endanger life and hinder rescue and fire fighting services.

The main fire performance requirements are:

## **Flame Retardancy**

The ability to slow down the spread of flames along the cable.

## **Low Smoke Emission**

The importance of personnel being able to see, in order to evacuate an area, and the fire-fighters having access to get to the seat of the fire.

## **Low Acid/Corrosive Gas Emission**

Not only are these gases injurious to health, but, when combined with atmospheric moisture or with water from 'Fire Fighting' appliances, may produce highly corrosive acids which can severely damage sensitive plant and equipment.

## **Fire Survival**

The ability to maintain circuit integrity during and after a fire.

# Unarmoured Single-Core Cables to BS6883

TAC. EPR. SW4 600/1000 V 6571



## Application

Unarmoured cable for use where mechanical protection is not required for fixed wiring in ships and in mobile and fixed offshore units (e.g. drilling rigs, oil platforms, etc.).

## Specifications

- In accordance with BS6883
- **Conductor:** Tinned annealed copper conductor. Stranded to BS EN 60228 Class 2
- **Insulation:** EPR complying with BS7655 GP4
- **Sheath:** LSZH to BSS7655 section 2.6 Type SW4. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
- **Identification:** Legend will include manufacturers name, voltage, BS6883, number of cores and c.s.a., cable sheath class (e.g. SW4), UK00A code where applicable
- Oxygen index > 32% Temperature index 250°C, HCL emission < 0.5% of weight of compound @ 800°C
- Flame retardant to IEC60332-3-22 Category A (reduced propagation)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 600/1000 V



# Unarmoured Single-Core Cables to BS6883

TAC. EPR. SW4 600/1000 V 6571

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Minimum O/D mm	Maximum O/D mm	Approx Weight kg/km	Anixter Number Prysmian A2EX Gland	Anixter Number Hawke A2F Gland
Single-Core 6571 type							E1AT-A2EX	E1AT-A2F
A10DA-010025-60	-	2.5	7/0.67	5.4	6.6	53	-20SS	-16H-A
A10DA-010040-60	-	4.0	7/0.85	6.4	7.5	78	-20SS	-16H-A
A10DA-010060-60	WE106	6.0	7/1.04	6.8	8.1	101	-20SS	-16H-A
A10DA-010100-60	-	10.0	7/1.35	7.7	9.1	148	-20S	-20SH-A
A10DA-010160-60	WE116	16.0	7/1.70	8.9	10.3	213	-20S	-20SH-A
A10DA-010250-60	-	25.0	19/1.35	11.1	12.8	339	-20	-20H-A
A10DA-010350-60	WE135	35.0	19/1.53	12.0	13.7	419	-20	-20H-A
A10DA-010500-60	-	50.0	19/1.78	13.7	15.5	562	-25S	-25H-A
A10DA-010700-60	WE170	70.0	19/2.14	15.5	17.4	776	-25	-25H-A
A10DA-010950-60	-	95.0	37/1.78	17.7	19.8	1028	-25	-25H-A
A10DA-011200-60	WE10A	120.0	37/2.03	19.6	22.0	1301	-32	-32H-A
A10DA-011500-60	-	150.0	37/2.25	21.6	24.2	1642	-32	-32H-A
A10DA-011850-60	WE10C	185.0	37/2.52	24.0	26.6	2008	-40	-32H-A
A10DA-012400-60	-	240.0	61/2.25	27.1	29.9	2617	-40	-40H-A

Part numbers refer to cables with green/yellow outer sheaths for earthing purposes.

Other colours available, details upon request.

For further technical information refer to page 6:27.

# Unarmoured Power and Control Cables to BS6883

Multicore - TAC. EPR. SW4 600/1000 V 657\*



## Application

Unarmoured cables, for use where the mechanical protection is not required, for fixed wiring in ships and in mobile and fixed offshore units (e.g. drilling rigs, oil platforms, etc.).

## Specifications

- In accordance with BS6883
  - **Conductor:** Tinned annealed copper conductor. Stranded to BS EN 60228 Class 2
  - **Insulation:** EPR complying with BS7655 GP4
  - **Core Identification:** The cores will be identified by either colours or numbers
  - **Outer Sheath:** LSZH to BSS7655 section 2.6 Type SW4. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
  - **Identification:** Legend will include manufacturers name, voltage, BS6883, number of cores and c.s.a., cable sheath class (e.g. SW4)
  - Standard sheath colours black. Other colours available on request
  - Oxygen index > 32% Temperature index 250°C, HCL emission < 0.5% of weight of compound at 800°C
  - Flame retardant to IEC 60332-3-22 Category A (reduced propagation)
  - **Temperature Rating:** 90°C maximum conductor operating temperature
  - **Voltage Rating:** 600/1000 V
- \* denotes number of cores.

# Unarmoured Power and Control Cables to BS6883

Multicore - TAC. EPR. SW4 600/1000 V 657\*

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Minimum O/D mm	Maximum O/D mm	Approx Weight kg/km	Anixter Number Prysmian A2EX Gland	Anixter Number Hawke A2F Gland
<b>Two core 6572</b>						E1AT-A2EX	E1AT-A2F
A10EB-020015-02	1.5	7/0.53	8.2	9.6	110	-20S	-20SH-A
A10EB-020025-02	2.5	7/0.67	9.0	10.4	141	-20S	-20SH-A
<b>Three core 6573</b>							
A10EB-030015-02	1.5	7/0.53	8.7	10.1	130	-20S	-20SH-A
A10EB-030025-02	2.5	7/0.67	9.8	11.0	168	-20S	-20SH-A
<b>Four core 6574</b>							
A10EB-040015-02	1.5	7/0.53	9.5	10.9	157	-20S	-20SH-A
A10EB-040025-02	2.5	7/0.67	10.5	12.1	210	-20	-20H-A
<b>Seven core 6577</b>							
A10EB-070015-02	1.5	7/0.53	11.5	13.2	259	-20	-20H-A
<b>Twelve core 6570/12</b>							
A10EB-120015-02	1.5	7/0.53	15.2	17.2	427	-25	-25H-A
<b>Nineteen core 6570/19</b>							
A10EB-190015-02	1.5	7/0.53	18.0	20.1	624	-25	-25H-A

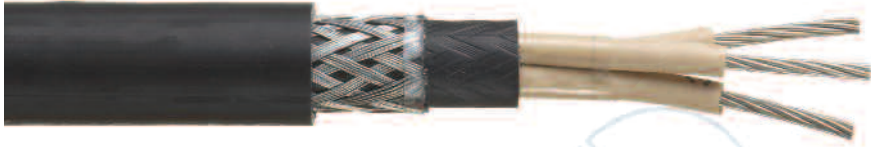
For further technical information refer to page 6:28.

# Armoured Power and Control Cables to BS6883

Low Smoke Zero Halogen

Single-Core - T.A.C EPR, SW4, WB, SW4 600/1000 V

Multicore - T.A.C EPR, SW4, GSWB, SW4 600/1000 V



## Application

Armoured cables for fixed wiring in ships and in mobile and fixed offshore units (e.g. drilling rigs, oil platforms, etc.). For use in regularly occupied areas such as accommodation facilities, control rooms and computer suites. Any application where life may be endangered by smoke and noxious fumes and where vital, sensitive equipment may be damaged by acid forming gases.

## Specifications

- In accordance with BS6883
- **Conductor:** Tinned annealed copper. Stranded to BS EN 60228 Class 2 or flexible to BS EN 60228 Class 5. Class 2 flexible can be supplied where required on 6sqmm and above
- **Insulation:** EPR complying with BS7655 GP4
- **Core Identification:** The cores shall be identified by numbers unless requested otherwise
- **Inner Sheath:** Will be the same material as the outer sheath, based generally on the requirements of BS7655 section 2.6 Type SW4. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
- **Armour:** wire braid in the following optional materials:
  - Galvanised mild steel to BS EN 10257-1
  - Tinned phosphor bronze to BS EN 12166
  - Copper to BS EN 13602
- **Outer Sheath:** As inner sheath. Identification legend will include manufacturers name, voltage, BS6883, number of cores and c.s.a. cable sheath class (e.g. SW4), IEC 60332 and UK00A code where applicable
- Standard sheath colour is black. Other colours available on request
- Oxygen index > 32%. Temperature index 250°C, HCL emission < 0.5% of weight of compound at 800°C
- Flame retardant to IEC60332-3-22 Category A (reduced propagation)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 600/1000 V

N.B. Galvanised mild steel should not be used on single-core cables where used for a.c. circuits.

# Armoured Power and Control Cables to BS6883

Low Smoke Zero Halogen

Single-Core - T.A.C EPR, SW4, WB, SW4 600/1000 V

Multicore - T.A.C EPR, SW4, GSWB, SW4 600/1000 V

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Diameter Over Inner Sheath		Minimum O/D mm	Maximum O/D mm	Approx Weight kg/km	Anixter No Prysman E1XF Gland	Anixter Number Hawke Gland
				Minimum mm	Maximum mm					
<b>Single-Core 6591</b>										
A10FM-010500-02	WA150	50	19/1.78	13.7	15.2	18.1	20.1	846	-25	-25
A10FM-010700-02	WA170	70	19/2.14	15.4	17.1	19.9	22.4	1102	-25	-25
A10FM-010950-02	WA195	95	37/1.78	17.7	19.4	22.4	24.9	1422	-25	-25
A10FM-011200-02	WA10A	120	37/2.03	19.6	21.5	24.5	27.0	1761	-32	-32
A10FM-011500-02	WA10B	150	37/2.25	21.6	23.7	26.8	29.4	2124	-32	-32
A10FM-011850-02	WA10C	185	37/2.52	24.0	26.3	30.0	33.3	2694	-32	-32
A10FM-012400-02	WA10D	240	61/2.25	27.1	29.4	33.3	36.6	3413	-40	-40
A10FM-013000-02	WA10E	300	61/2.52	30.0	32.9	36.5	40.0	4173	-40	-40
<b>Two Core 6582</b>										
A10FM-020015F-02	WB202	1.5	30/0.25	8.4	9.5	12.4	14.0	268	-20S	-20S
A10FM-020025-02	WB203	2.5	7/0.67	9.2	10.3	13.2	14.7	314	-20S	-20S
A10FM-020040-02	WB204	4.0	7/0.85	11.3	12.6	15.5	17.2	430	-20	-20
A10FM-020060-02	WB206	6.0	7/1.04	12.4	13.8	16.8	18.5	523	-20	-20
A10FM-020100-02	WB210	10	7/1.35	14.5	15.9	18.9	20.6	687	-25	-25
A10FM-020160-02	WB216	16	7/1.70	16.8	18.3	21.3	23.5	925	-25	-25
A10FM-020250-02	WB225	25	19/1.35	20.5	22.4	25.4	27.9	1365	-32	-32
<b>Three Core 6583</b>										
A10FM-030015F-02	WB302	1.5	30/0.25	8.9	10.0	12.9	14.4	298	-20S	-20S
A10FM-030025-02	WB303	2.5	7/0.67	9.8	11.0	14.0	15.5	360	-20S	-20S
A10FM-030040-02	WB304	4.0	7/0.85	12.0	13.4	16.2	17.9	490	-20	-20
A10FM-030060-02	WB306	6.0	7/1.04	13.2	14.6	17.6	19.4	601	-25	-25
A10FM-030100-02	WB310	10.0	7/1.35	15.4	17.0	19.9	22.2	821	-25	-25
A10FM-030160-02	WB316	16.0	7/1.70	17.9	19.4	22.6	24.8	1113	-25	-25
A10FM-030250-02	WB325	25.0	19/1.35	22.1	24.1	27.2	29.8	1687	-32	-32
A10FM-030350-02	WB335	35.0	19/1.53	24.1	26.1	30.1	33.1	2120	-32	-32
A10FM-030500-02	WB350	50.0	19/1.78	27.8	29.8	34.0	36.9	2736	-40	-40
A10FM-030700-02	WB370	70.0	19/2.14	31.9	34.3	38.5	41.8	3660	-50S	-40
A10FM-030950-02	WB395	95.0	37/1.78	36.8	39.2	43.8	47.2	4773	-50	-50
A10FM-031200-02	WB30A	120.0	37/2.03	40.6	43.4	48.0	51.9	5925	-50	-50
A10FM-031500-02	WB30B	150.0	37/2.25	45.0	47.9	52.7	56.8	7178	-63S	-63
A10FM-031850-02	WB30C	185.0	37/2.52	50.2	53.6	58.3	62.9	8881	-63	-63
A10FM-032400-02	WB30D	240.0	61/2.25	56.8	60.3	65.3	70.1	11325	-75S	-75

Continued overleaf...

# Armoured Power and Control Cables to BS6883

Low Smoke Zero Halogen (continued)

Single-Core - T.A.C EPR, SW4, WB, SW4 600/1000 V

Multicore - T.A.C EPR, SW4, GSWB, SW4 600/1000 V

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Diameter Over Inner Sheath		Minimum O/D mm	Maximum O/D mm	Approx Weight kg/km	Anixter No Prysmian E1XF Gland	Anixter No Hawke Gland
				Minimum mm	Maximum mm					
									E1BP-E1XF	E1DZ-UNI
<b>Four Core 6584</b>										
A10FM-040015F-02	WB402	1.5	30/0.25	9.7	10.9	13.9	15.4	342	-20S	-20S
A10FM-040025-02	WB403	2.5	7/0.67	10.7	12.0	14.9	16.4	419	-20	-20
A10FM-040040-02	WB404	4.0	7/0.85	13.2	14.6	17.6	19.3	586	-20	-20
A10FM-040060-02	WB406	6.0	7/1.04	14.7	16.2	19.3	21.1	737	-25	-25
A10FM-040100-02	WB410	10.0	7/1.35	17.2	18.7	21.9	24.1	1013	-25	-25
A10FM-040160-02	WB416	16.0	7/1.70	19.9	21.8	24.8	27.1	1382	-32	-32
A10FM-040250-02	WB425	25.0	19/1.35	24.6	26.6	30.6	33.6	2191	-40	N/A
A10FM-040350-02	WB435	35.0	19/1.53	26.9	28.9	33.1	36.0	2654	-40	-40
A10FM-040500-02	WB450	50.0	19/1.78	30.9	33.3	37.5	40.6	3434	-50S	-40
A10FM-040700-02	WB470	70.0	19/2.14	35.5	37.9	42.4	46.0	4625	-50	-50
A10FM-040950-02	WB495	95.0	37/1.78	40.9	43.7	48.3	52.1	6020	-50	-50
A10FM-041200-02	WB40A	120.0	37/2.03	45.4	48.3	53.1	57.2	7525	-63S	-63
A10FM-041500-02	WB40B	150.0	37/2.25	50.3	53.5	58.4	62.9	9125	-63	-63
A10FM-041850-02	WB40C	185.0	37/2.52	56.0	59.5	64.5	69.4	11221	-75S	-75

## Armoured Power and Control Cables to BS6883

Low Smoke Zero Halogen

Single-Core - T.A.C EPR, SW4, WB, SW4 600/1000 V

Multicore - T.A.C EPR, SW4, GSWB, SW4 600/1000 V

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Diameter Over Inner Sheath		Minimum O/D	Maximum O/D	Approx Weight	Anixter No Prysman E1XF Gland	Anixter Number Hawke Gland
				Minimum mm	Maximum mm	mm	mm	kg/km		
<b>Seven Core 6587</b>										
A10FM-070015F-02	WB702	1.5	30/0.25	11.8	13.2	16.0	17.7	476	-20	-20
A10FM-070025-02	WB703	2.5	7/0.67	13.1	14.4	17.4	19.1	590	-20	-20
<b>Twelve Core 6580/12</b>										
A10FM-120015F-02	WBA02	1.5	30/0.25	15.7	17.2	20.2	22.4	732	-25	-25
A10FM-120025-02	WBA03	2.5	7/0.67	17.7	19.3	22.4	24.8	935	-25	-25
<b>Nineteen Core 6580/19</b>										
A10FM-190015F-02	WBB02	1.5	30/0.25	18.6	20.1	22.5	24.8	935	-25	-25
A10FM-190025-02	WBB03	2.5	7/0.67	20.9	22.7	25.8	28.0	1287	-32	-32
<b>Twenty Seven Core 6580/27</b>										
A10FM-270015F-02	LBC02	1.5	30/0.25	22.7	24.5	27.8	30.0	1359	-32	-32
A10FM-270025-02	LBC03	2.5	7/0.67	25.4	27.6	31.4	34.5	1854	-40	-40
<b>Thirty Seven Core 6580/37</b>										
A10FM-370015F-02	LBD02	1.5	30/0.25	25.5	27.3	31.5	34.2	1805	-40	-40
A10FM-370025-02	-	2.5	7/0.67	28.7	30.9	34.9	38.1	2349	-40	-40

For further technical information refer to page 6:27 (Single-Core), 6:28 (Multicore).

# Armoured Instrumentation Cables to BS6883

Low Smoke Zero Halogen Pairs/Triples - Collectively Screened

TAC, EPR, SCRIN, SW4, GSWB, SW4 150/250 V



## Application

Armoured control and instrumentation cables for fixed wiring on ships and in mobile offshore units (e.g. drilling rigs, oil platforms, etc.). For use in regularly occupied areas such as accommodation facilities, control rooms and computer suites. Any application where life may be endangered by smoke and noxious fumes and where vital, sensitive equipment may be damaged by acid forming gases.

## Specifications

- In accordance with BS6883
- **Conductor:** Tinned annealed copper. Stranded Class 2 or flexible Class 5 to BS EN 60228
- **Insulation:** EPR complying with BS7655 GP4
- **Core Identification:** Black and white pairs. Triples black, white and red
- **Screening:** Aluminium mylar tape in contact with tinned copper drain wire
- **Inner Sheath:** Will be the same material as the outer sheath, based on the requirements of BS7655 section 2.6 Type SW4 with improved characteristics. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
- **Armour:** Galvanised steel wire braid to BS EN 10257-1
- **Outer Sheath:** As inner sheath. Identification legend will include manufacturers name, voltage, BS6883, number of pairs/triples and c.s.a, cable sheath class (e.g. SW4) and IEC 60332 and UK00A code where applicable
- Standard sheath colours are grey, blue or black. Other colours available on request
- Oxygen index > 32%, temperature index 250°C, HCL emission < 0.5% of weight of compound at 800°C
- Flame retardant to IEC60332-3-22 Category A (reduced propagation)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 150/250 V



## Armoured Instrumentation Cables to BS6883

Low Smoke Zero Halogen Pairs/Triples - Collectively Screened

TAC, EPR, SCRNL, SW4, GSWB, SW4 150/250 V

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Number of Pairs/Triples	Diameter Over Inner Sheath		Min O/D mm	Max O/D mm	Approx Weight kg/km	Anixter No Prysmian E1XF Gland	Anixter Number Hawke Gland
					Min mm	Max mm					
<b>Multipair</b>											
A10FK-03075F-D-06	KGH00	0.75	24/0.2	3PR	12.0	13.7	16.1	18.4	468	-20	-20
A10FK-03075F-D-09	KJH00	0.75	24/0.2	3PR	12.0	13.7	16.1	18.4	468	-20	-20
A10FK-07075F-D-06	KGJ00	0.75	24/0.2	7PR	16.0	17.9	20.3	23.1	706	-25	-25
A10FK-07075F-D-09	KJJ00	0.75	24/0.2	7PR	16.0	17.9	20.3	23.1	706	-25	-25
A10FK-12075F-D-06	KGK00	0.75	24/0.2	12PR	21.3	23.8	26.0	29.1	1030	-32	-32
A10FK-12075F-D-09	KJK00	0.75	24/0.2	12PR	21.3	23.8	26.0	29.1	1030	-32	-32
A10FK-20075F-D-06	KGL00	0.75	24/0.2	20PR	26.8	29.5	32.8	36.5	1662	-40	-40
A10FK-20075F-D-09	KJL00	0.75	24/0.2	20PR	26.8	29.5	32.8	36.5	1662	-40	-40
A10FK-01015-D-##	-	1.5	7/0.53	1PR	8.7	9.8	12.7	14.3	297	-20S	-20S
A10FK-02015-D-##	-	1.5	7/0.53	2PR	13.4	14.8	17.8	19.7	505	-25	-25
A10FK-03015-D-##	-	1.5	7/0.53	3PR	14.4	16.0	18.8	20.8	593	-25	-25
A10FK-05015-D-##	-	1.5	7/0.53	5PR	17.5	19.1	22.2	24.6	826	-25	-25
A10FK-07015-D-##	-	1.5	7/0.53	7PR	19.0	23.7	23.7	26.2	929	-25	-25
A10FK-10015-D-##	-	1.5	7/0.53	10PR	24.2	26.4	29.5	32.6	1343	-32	-32
A10FK-12015-D-##	-	1.5	7/0.53	12PR	25.0	27.2	31.0	34.2	1510	-40	-40
A10FK-20015-D-##	-	1.5	7/0.53	20PR	31.5	34.2	38.1	41.7	2287	-50S	-40
<b>Multitriple</b>											
A10FK-01015T-B-##	-	1.5	7/0.53	1TR	9.2	10.3	13.2	14.8	304	-20S	-20S
A10FK-03015T-B-##	-	1.5	7/0.53	3TR	17.9	19.6	22.4	24.9	760	-25	-25
A10FK-07015T-B-##	-	1.5	7/0.53	7TR	24.1	26.3	29.0	32.0	1262	-32	-32
A10FK-12015T-B-##	-	1.5	7/0.53	12TR	32.6	35.4	38.9	42.5	2148	-50S	-40

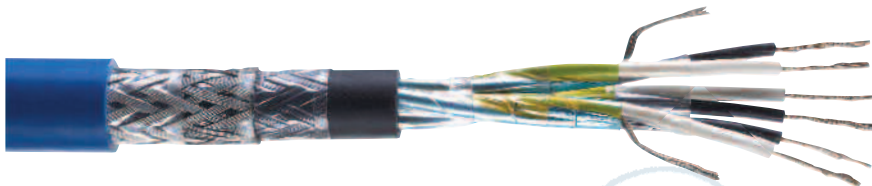
## For black outer sheath insert suffix -02, for blue outer sheath insert suffix -06, for grey outer sheath insert suffix -09.

For further technical information refer to page 6:32.

# Armoured Instrumentation Cables to BS6883

Low Smoke Zero Halogen Pairs/Triples/Quads - Individually Screened

TAC, EPR, SCRIN, SW4, GSWB, SW4 150/250 V



## Application

Armoured control and instrumentation cables for fixed wiring on ships and in mobile offshore units (e.g. drilling rigs, oil platforms, etc.). For use in regularly occupied areas such as accommodation facilities, control rooms and computer suites. Any application where life may be endangered by smoke and noxious fumes and where vital, sensitive equipment may be damaged by acid forming gases.

## Specifications

- In accordance with BS6883
- **Conductor:** Tinned annealed copper. Stranded Class 2 or flexible Class 5 to BS EN 60228
- **Insulation:** EPR complying with BS7655 GP4
- **Core Identification:** Black and white pairs. Triples - black, white and red. Quads - black, white, red, blue
- **Screening:** Aluminium mylar tape wrapped round each pair/triple/quad in contact with tinned copper drain wire
- **Inner Sheath:** Will be the same material as the outer sheath based on the requirements of BS7655 Section 2.6 Type SW4 with improved characteristics. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
- **Armour:** Galvanised steel wire braid to BS EN 10257-1
- **Outer Sheath:** As inner sheath. Identification legend will include manufacturers name, voltage, BS6883, number of pairs/triples and c.s.a., cable sheath class (e.g. SW4), IEC 60332 and UK00A code where applicable
- Standard sheath colours are grey, blue or black. Other colours available on request
- Oxygen index > 32%. Temperature index 250°C, HCL emission < 0.5% of weight of compound at 800°C
- Flame retardant to IEC 60332-3-22 Category A (reduced propagation)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 150/250 V

## Armoured Instrumentation Cables to BS6883

Low Smoke Zero Halogen Pairs/Triples/Quads - Individually Screened

TAC, EPR, SCRNL, SW4, GSWB, SW4 150/250 V

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Number of Pairs/Triples	Diameter Over Inner Sheath		Min O/D mm	Max O/D mm	Approx Weight kg/km	Anixter No Prysmian E1XF Gland	Anixter Number Hawke Gland
					Min mm	Max mm					
<b>Multipairs</b>											
A10FK-02075-C-##	-	0.75	7/0.37	2PR	12.6	14.1	17.0	19.0	480	-20	-20
A10FK-03075-C-##	-	0.75	7/0.37	3PR	13.2	14.7	17.6	19.6	549	-20	-20
A10FK-05075-C-##	-	0.75	7/0.37	5PR	16.3	18.0	20.8	23.3	777	-25	-25
A10FK-10075-C-##	-	0.75	7/0.37	10PR	22.3	24.5	27.4	30.2	1273	-32	-32
A10FK-02075F-D-06	KHX00	0.75	24/0.2	2PR(QD)	9.1	10.3	13.2	14.6	287	-20S	-20S
A10FK-02075F-D-09	KKX00	0.75	24/0.2	2PR(QD)	9.1	10.3	13.2	14.6	287	-20S	-20S
A10FK-03075F-C-06	KHH00	0.75	24/0.2	3PR	13.2	14.7	17.6	19.6	549	N/A	-25
A10FK-03075F-C-09	KKH00	0.75	24/0.2	3PR	13.2	14.7	17.6	19.6	549	N/A	-25
A10FK-07075F-C-06	KHJ00	0.75	24/0.2	7PR	18.2	20.0	22.9	25.5	919	-25	-25
A10FK-07075F-C-09	KKJ00	0.75	24/0.2	7PR	18.2	20.0	22.9	25.5	919	-25	-25
A10FK-12075F-C-06	KHK00	0.75	24/0.2	12PR	23.4	25.6	28.6	31.5	1380	-32	-32
A10FK-12075F-C-09	KKK00	0.75	24/0.2	12PR	23.4	25.6	28.6	31.5	1380	-32	-32
A10FK-01010F-D-06	KHF01	1.0	32/0.2	1PR	7.9	9.1	11.9	13.6	262	-20S	-20S
A10FK-01010F-D-09	KKF01	1.0	32/0.2	1PR	7.9	9.1	11.9	13.6	262	-20S	-20S
A10FK-02015-C-##	-	1.5	7/0.53	2PR	14.6	16.1	19.0	21.1	591	-25	-25
A10FK-03015-C-##	-	1.5	7/0.53	3PR	15.2	16.8	19.7	22.1	697	-25	-25
A10FK-05015-C-##	-	1.5	7/0.53	5PR	18.8	20.5	23.5	26.0	983	-25	-25
A10FK-07015-C-##	-	1.5	7/0.53	7PR	20.9	23.0	25.9	28.5	1181	-32	-32
A10FK-10015-C-##	-	1.5	7/0.53	10PR	25.6	27.8	31.8	35.0	1323	-32	-32
A10FK-12015-C-##	-	1.5	7/0.53	12PR	27.2	29.4	33.4	36.5	1907	-40	-40
A10FK-20015-C-##	-	1.5	7/0.53	20PR	36.2	39.0	42.9	46.8	3052	-50	-50
<b>Multitriple</b>											
A10FK-03075TF-A-06	KHS00	0.75	24/0.2	3TR	16.0	17.6	20.5	22.9	699	-25	-25
A10FK-03075TF-A-09	KKS00	0.75	24/0.2	3TR	16.0	17.6	20.5	22.9	699	-25	-25
A10FK-07075TF-A-06	KHT00	0.75	24/0.2	7TR	24.0	26.2	28.9	31.9	1172	-32	-32
A10FK-07075TF-A-09	KKT00	0.75	24/0.2	7TR	24.0	26.2	28.9	31.9	1172	-32	-32
A10FK-12075TF-A-06	KHU00	0.75	24/0.2	12TR	29.2	31.8	35.4	38.8	1982	-40	-40
A10FK-12075TF-A-09	KKU00	0.75	24/0.2	12TR	29.2	31.8	35.4	38.8	1982	-40	-40
A10FK-01010TF-B-06	KHR01	1.0	32/0.2	1TR	8.6	9.7	12.6	14.2	273	-20S	-20S
A10FK-01010TF-B-09	KKR01	1.0	32/0.2	1TR	8.6	9.7	12.6	14.2	273	-20S	-20S

## For black outer sheath insert suffix -02, for blue outer sheath insert suffix -06, for grey outer sheath insert suffix -09.

(QD) = Quad.

For further technical information refer to page 6:32.

# Armoured Power and Control Cables to BS7917

Fire Resistant, TAC. MGT. EPR. ZH. GSWB. SW4, 600/1000 V. Low Smoke Zero Halogen



## Application

Armoured cables for fixed wiring in ships and offshore units where circuit integrity is essential under fire conditions, e.g. safety and emergency lighting, fire pumps, shut down systems, communications systems, gas detectors, alarms, etc. For use in regularly occupied areas such as accommodation facilities, control rooms and computer suites. Any application where life may be endangered by smoke and noxious fumes and where vital, sensitive equipment may be damaged by acid forming gases.

## Specifications

- In accordance with BS7917. Fire resisting properties, relevant to the internationally recognised test of IEC60331
  - **Conductor:** Tinned annealed copper conductor. Stranded to BS EN 60228 Class 2 or flexible to BS EN 60228 Class 5
  - **Insulation:** Mica Glass Tape, EPR complying with BS7655 GP4
  - **Core Identification:** The cores shall be identified by numbers unless specified otherwise
  - **Inner Sheath:** Zero halogen rubber complying generally with BS7655
  - **Armour:** Wire braid in the following optional materials:
    - Galvanised mild steel to BS EN 10257-1.
    - Tinned phosphor bronze to BS EN 12166.
    - Copper to BS4109.
- N.B. Galvanised mild steel should not be used on single-core cables where used for a.c. circuits.
- **Outer Sheath:** Low smoke zero halogen type SW4 to BS7655 Section 2.6. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
  - **Identification:** Legend will include manufacturers name, voltage, number of cores and c.s.a, cable sheath class (e.g. SW4), IEC 60331 and UK00A reference where applicable
  - Standard sheath colour black. Other colours available on request
  - Oxygen index > 32%. Temp index 250°C, HCL emission < 0.5% of weight of compound at 800°C
  - Flame retardant to IEC 60332-3-22 Category A (reduced propagation)
  - Fire resistant to IEC 60331 (enhanced to 1000°C for 3 hours)
  - **Temperature Rating:** 90°C maximum conductor operating temperature
  - **Voltage Rating:** 600/1000 V

# Armoured Power and Control Cables to BS7917

Fire Resistant, TAC. MGT. EPR. ZH. GSWB. SW4, 600/1000 V. Low Smoke Zero Halogen



## Application

Armoured cables for fixed wiring in ships and offshore units where circuit integrity is essential under fire conditions, e.g. safety and emergency lighting, fire pumps, shut down systems, communications systems, gas detectors, alarms, etc. For use in regularly occupied areas such as accommodation facilities, control rooms and computer suites. Any application where life may be endangered by smoke and noxious fumes and where vital, sensitive equipment may be damaged by acid forming gases.

## Specifications

- In accordance with BS7917. Fire resisting properties, relevant to the internationally recognised test of IEC60331
  - **Conductor:** Tinned annealed copper conductor. Stranded to BS EN 60228 Class 2 or flexible to BS EN 60228 Class 5
  - **Insulation:** Mica Glass Tape, EPR complying with BS7655 GP4
  - **Core Identification:** The cores shall be identified by numbers unless specified otherwise
  - **Inner Sheath:** Zero halogen rubber complying generally with BS7655
  - **Armour:** Wire braid in the following optional materials:
    - Galvanised mild steel to BS EN 10257-1.
    - Tinned phosphor bronze to BS EN 12166.
    - Copper to BS4109.
- N.B. Galvanised mild steel should not be used on single-core cables where used for a.c. circuits.
- **Outer Sheath:** Low smoke zero halogen type SW4 to BS7655 Section 2.6. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
  - **Identification:** Legend will include manufacturers name, voltage, number of cores and c.s.a, cable sheath class (e.g. SW4), IEC 60331 and UK00A reference where applicable
  - Standard sheath colour black. Other colours available on request
  - Oxygen index > 32%. Temp index 250°C, HCL emission < 0.5% of weight of compound at 800°C
  - Flame retardant to IEC 60332-3-22 Category A (reduced propagation)
  - Fire resistant to IEC 60331 (enhanced to 1000°C for 3 hours)
  - **Temperature Rating:** 90°C maximum conductor operating temperature
  - **Voltage Rating:** 600/1000 V

## Armoured Power and Control Cables to BS7917

Fire Resistant, TAC. MGT. EPR. ZH. GSWB. SW4, 600/1000 V. Low Smoke Zero Halogen

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Diameter Over Inner Sheath		Minimum O/D mm	Maximum O/D mm	Approx Weight kg/km	Anixter No Prysmian E1XF Gland	Anixter Number Hawke Gland
				Minimum mm	Maximum mm					
<b>Multicore TAC. MGT. EPR. ZH. GSWB. SW4 600/1000 V</b>										
<b>Two Core</b>										
A10FN-020015F-02	YD202	1.5	30/0.25	9.2	10.4	13.4	14.7	304	E1BP-E1XF	E1DZ-UNI
A10FN-020025-02	YD203	2.5	7/0.67	10.0	11.4	14.1	15.5	341	-20S	-20S
<b>Three Core</b>										
A10FN-030015F-02	YD302	1.5	30/0.25	9.8	11.0	13.8	15.2	328	-20S	-20S
A10FN-030025-02	YD303	2.5	7/0.67	10.7	12.0	14.9	16.4	387	-20	-20
A10FN3-0040-02	YD304	4.0	7/0.85	12.9	14.3	17.1	18.8	515	-20	-20
A10FN3-0060-02	YD306	6.0	7/1.04	14.1	15.5	18.5	20.2	626	-25	-25
A10FN3-0100-02	YD310	10	7/1.35	16.3	17.8	20.8	22.9	844	-25	-25
A10FN3-0160-02	YD316	16	7/1.70	18.8	20.3	23.5	25.6	1133	-25	-25
A10FN3-0250-02	YD325	25	19/1.35	23.2	25.2	28.4	30.6	1677	-32	-32
A10FN3-0350-02	YD335	35	19/1.53	25.3	27.2	31.3	33.8	2111	-40	-40
A10FN3-0500-02	YD350	50	19/1.78	28.9	30.9	35.1	37.6	2723	-40	-40
A10FN3-0700-02	YD370	70	19/2.14	33.0	35.4	39.6	42.5	3610	-50S	N/A
A10FN3-0950-02	YD395	95	37/1.78	37.9	40.3	44.9	47.9	4683	-50	-50
<b>Four Core</b>										
A10FN-040015F-02	YD402	1.5	30/0.25	10.7	12.0	14.9	16.5	384	-20	-20
A10FN-040025-02	YD403	2.5	7/0.67	11.7	13.1	15.9	17.6	453	-20	-20
A10FN4-0040-02	YD404	4.0	7/0.85	14.2	15.6	18.6	20.3	621	-25	-25
A10FN4-0060-02	YD406	6.0	7/1.04	15.8	17.3	20.3	22.3	771	-25	-25
A10FN4-0100-02	YD410	10	7/1.35	18.2	19.7	22.9	25.0	1050	-25	-25
A10FN4-0160-02	YD416	16	7/1.70	20.9	22.8	25.9	28.0	1415	-32	-32
A10FN4-0250-02	YD425	25	19/1.35	25.9	27.9	31.9	34.4	2199	-40	N/A
A10FN4-0350-02	YD435	35	19/1.53	28.1	30.1	34.3	36.9	2630	-40	-40
A10FN4-0500-02	YD450	50	19/1.78	32.2	34.5	38.8	41.7	3421	-50S	N/A
A10FN4-0700-02	YD470	70	19/2.14	36.7	39.2	43.7	46.7	4556	-50	-50
A10FN4-0950-02	YD495	95	37/1.78	42.2	44.9	49.5	52.9	5950	-63S	-50
<b>Seven Core</b>										
A10FN-070015F-02	YD702	1.5	30/0.25	13.0	14.4	17.2	18.9	520	-20	-20
A10FN-070025-02	YD703	2.5	7/0.67	14.2	15.6	18.6	20.3	646	-25	-25
<b>Twelve Core</b>										
A10FN-120015F-02	YDA02	1.5	30/0.25	17.3	18.8	21.8	24.0	804	-25	-25
A10FN-120025-02	YDA03	2.5	7/0.67	19.3	20.8	24.0	26.2	1005	-32	-32
<b>Nineteen Core</b>										
A10FN-190015F-02	YDB02	1.5	30/0.25	20.5	22.4	25.3	27.5	1108	-32	-32
A10FN-190025-02	YDB03	2.5	7/0.67	22.8	24.7	27.8	30.0	1392	-32	-32
<b>Twenty Seven Core</b>										
A10FN-270015F-02	YDC02	1.5	30/0.25	25.1	26.9	30.1	32.8	1510	-40	-32
A10FN-270025-02	YDC03	2.5	7/0.67	27.9	30.2	33.9	36.7	2000	-40	-40
<b>Thirty Seven Core</b>										
A10FN-370015F-02	YDD02	1.5	30/0.25	28.3	30.4	34.3	37.0	2010	-40	-40

For further technical information please refer to page 6:32.

# Armoured Instrumentation Cables to BS7917

Fire Resistant, Pairs/Triples - Collectively Screened. Low Smoke Zero Halogen

TAC, MGT, EPR, SCRN, ZH, GSWB, SW4 150/250 V



## Application

Control and instrumentation cable for use in fixed installations in ships and offshore units where fire resistance and circuit integrity is essential. For use in regularly occupied areas such as accommodation facilities, control rooms and computer suites. Any application where life may be endangered by smoke and noxious fumes and where vital, sensitive equipment may be damaged by acid forming gases.

## Specifications

- In accordance with BS7917. Fire resistant properties relevant to IEC60331
- **Conductor:** Tinned annealed copper. Stranded to BS EN 60228 Class 2 or flexible to BS EN 60228 Class 5
- **Insulation:** Mica Glass Tape, EPR complying with BS7655 GP4
- **Core Identification:** Black and white pairs. Triples black, white and red
- **Screening:** Aluminium mylar tape in contact with tinned copper drain wire
- **Inner Sheath:** Zero halogen rubber complying generally with BS7655
- **Armour:** Galvanised steel wire braid to BS EN 10257-1
- **Outer Sheath:** Low smoke zero halogen Type SW4 to BS7655 section 2.6. Enhanced oil resistance, low smoke zero halogen, minimum tear resistance
- **Identification:** Legend will include manufacturers name, voltage, number of pairs/triples c.s.a, cable sheath type (e.g. SW4), IEC 60331 and UK00A code where applicable
- Standard sheath colours are grey, blue or black. Other colours available on request
- Oxygen index > 32%. Temperatures index 250°C, HCL emission < 0.5% of weight of compound at 800°C
- Flame retardant to IEC 60332-3-22 Category A (reduced propagation)
- Fire resistant to IEC60331 (enhanced to 1000°C for 3 hours)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 150/250 V

# Armoured Instrumentation Cables to BS7917

Fire Resistant, Pairs/Triples - Collectively Screened. Low Smoke Zero Halogen  
TAC, MGT, EPR, SCRNI, ZH, GSWB, SW4 150/250 V

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Number of Pairs/Triples	Diameter Over Inner Sheath		Min O/D mm	Max O/D mm	Approx Weight kg/km	Anixter No Prysmian E1XF Gland	Anixter Number Hawke Gland
					Min mm	Max mm					
<b>Multipairs</b>											
A10BZ-03075F-D-06	GLH00	0.75	24/0.2	3PR	13.4	15.1	17.5	19.8	629	-25	-25
A10BZ-03075F-D-09	GNH00	0.75	24/0.2	3PR	13.4	15.1	17.5	19.8	629	-25	-25
A10BZ-07075F-D-06	GLJ00	0.75	24/0.2	7PR	17.9	19.9	22.2	25.1	936	-25	-25
A10BZ-07075F-D-09	GNJ00	0.75	24/0.2	7PR	17.9	19.9	22.2	25.1	936	-25	-25
A10BZ-12075F-D-06	GLK00	0.75	24/0.2	12PR	23.9	26.5	28.6	30.8	1350	-32	-32
A10BZ-12075F-D-09	GNK00	0.75	24/0.2	12PR	23.9	26.5	28.6	30.8	1350	-32	-32
A10BZ-20075F-D-06	GLL00	0.75	24/0.2	20PR	30.1	33.3	36.1	40.0	2124	-40	-40
A10BZ-20075F-D-09	GNL00	0.75	24/0.2	20PR	30.1	33.3	36.1	40.0	2124	-40	-40
A10BZ-01015-D-##	-	1.5	7/0.53	1PR	9.6	10.8	13.6	15.2	320	-20S	-20S
A10BZ-02015-D-##	-	1.5	7/0.53	2PR	14.7	16.2	19.1	25.5	666	-25	-25
A10BZ-03015-D-##	-	1.5	7/0.53	3PR	15.8	17.4	20.1	26.6	771	-25	-25
A10BZ-05015-D-##	-	1.5	7/0.53	5PR	19.3	21.1	24.0	30.5	1045	-32	-32
A10BZ-07015-D-##	-	1.5	7/0.53	7PR	21.0	23.0	25.7	32.6	1189	-32	-32
A10BZ-10015-D-##	-	1.5	7/0.53	10PR	26.8	29.0	32.0	39.2	1678	-40	-40
A10BZ-12015-D-##	-	1.5	7/0.53	12PR	27.7	29.9	33.7	40.8	1869	-50S	-50
A10BZ-20015-D-##	-	1.5	7/0.53	20PR	34.9	37.6	41.4	45.3	2860	-50S	-50
A10BZ-24015-D-##	-	1.5	7/0.53	24PR	39.0	42.0	45.8	49.7	3225	-50	-50
<b>Multitriples</b>											
A10BZ-01015T-B-##	-	1.5	7/0.53	1TR	10.1	11.4	14.2	15.8	336	-20	-20
A10BZ-03015T-B-##	-	1.5	7/0.53	3TR	19.8	21.8	24.3	31.0	979	-32	-32
A10BZ-07015T-B-##	-	1.5	7/0.53	7TR	26.7	28.8	31.5	38.7	1594	-40	-40
A10BZ-12015T-B-##	-	1.5	7/0.53	12TR	36.2	39.0	42.4	50.1	2647	-50	-50

## For black outer sheath insert suffix -02, for blue outer sheath insert suffix -06, for grey outer sheath insert suffix -09.

For further technical information please refer to page 6:32.



# Armoured Instrumentation Cables to BS7917

Fire Resistant, Pairs/Triples/Quads - Individually Screened.

Low Smoke Zero Halogen

TAC, MGT, EPR, SCRN, ZH, GSWB, SW4 150/250 V



## Application

Control and instrumentation cable for use in fixed installations in ships and offshore units where fire resistance and circuit integrity is essential.

## Specifications

- In accordance with BS7917. Fire resistant properties relevant to IEC60331
- **Conductor:** Tinned annealed copper. Stranded to BS EN 60228 Class 2 or flexible to BS EN 60228 Class 5
- **Insulation:** Mica Glass Tape, EPR complying with BS7655 GP4
- **Core Identification:** Black and white pairs. Triples black, white and red. Quads, black, white, red, blue
- **Screening:** Aluminium mylar tape wrapped over each pair/triple/quad in contact with tinned copper drain wire
- **Inner Sheath:** Zero halogen rubber complying generally with BS7655
- **Armour:** Galvanised steel wire braid to BS EN 10257-1
- **Outer Sheath:** Low smoke zero halogen Type SW4 to BS7655 section 2.6. Enhanced oil resistance, low smoke zero halogen
- **Identification:** Legend will include manufacturers name, voltage, number of pairs/triples/quads, c.s.a., IEC 60331, and UK00A code where applicable
- Standard sheath colours are grey, blue or black. Other colours available on request
- Oxygen index > 32%. Temperature index 250°C, HCL emission < 0.5% of weight of compound at 800°C
- Flame retardant to IEC 60332-3-22 Category A (reduced propagation)
- Fire resistant to IEC60331 (enhanced to 1000°C for 3 hours)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 150/250 V

# Armoured Instrumentation Cables to BS7917

Fire Resistant, Pairs/Triples/Quads - Individually Screened.

Low Smoke Zero Halogen

TAC, MGT, EPR, SCRIN, ZH, GSWB, SW4 150/250 V

Anixter Number	UK00A Code	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Number of Pairs/Triples	Diameter Over Inner Sheath		Min O/D mm	Max O/D mm	Approx Weight kg/km	Anixter No Prysmian E1XF Gland	Anixter Number Hawke Gland
					Min mm	Max mm					
<b>Multipairs</b>											
A10BZ-02075F-D-06	GMX00	0.75	24/0.2	2PR(QD)	9.6	11.2	13.4	15.3	305	-20S	-20S
A10BZ-02075F-D-09	GPX00	0.75	24/0.2	2PR(QD)	9.6	11.2	13.4	15.3	305	-20S	-20S
A10BZ-03075F-C-06	GMH00	0.75	24/0.2	3PR	14.9	16.8	19.0	21.4	584	-25	-25
A10BZ-03075F-C-09	GPH00	0.75	24/0.2	3PR	14.9	16.8	19.0	21.4	584	-25	-25
A10BZ-07075F-C-06	GMJ00	0.75	24/0.2	7PR	20.2	22.6	24.7	27.7	982	-32	-32
A10BZ-07075F-C-09	GPJ00	0.75	24/0.2	7PR	20.2	22.6	24.7	27.7	982	-32	-32
A10BZ-12075F-C-06	GMK00	0.75	24/0.2	12PR	27.4	30.1	32.3	36.0	1504	-32	-32
A10BZ-12075F-C-06	GPK00	0.75	24/0.2	12PR	27.4	30.1	32.3	36.0	1504	-32	-32
A10BZ-01010F-D-06	GMF01	1.0	32/0.2	1PR	7.9	9.2	11.6	13.5	286	-20S	-20S
A10BZ-01010F-D-09	GPF01	1.0	32/0.2	1PR	7.9	9.2	11.6	13.5	286	-20S	-20S
A10BZ-02015-C-##	-	1.5	7/0.53	2PR	14.9	16.5	19.3	21.5	602	-25	-25
A10BZ-03015-C-##	-	1.5	7/0.53	3PR	15.9	17.5	20.4	22.8	732	-25	-25
A10BZ-05015-C-##	-	1.5	7/0.53	5PR	19.5	21.4	24.2	26.7	1031	-32	-25
A10BZ-07015-C-##	-	1.5	7/0.53	7PR	21.5	23.6	26.5	29.1	1242	-32	-32
A10BZ-10015-C-##	-	1.5	7/0.53	10PR	27.4	29.6	33.6	36.7	1877	-40	-40
A10BZ-12015-C-##	-	1.5	7/0.53	12PR	28.6	30.8	34.8	37.9	2039	-40	-40
A10BZ-20015-C-##	-	1.5	7/0.53	20PR	36.1	38.4	42.9	46.7	3232	-50	-50
<b>Multitriples</b>											
A10BZ-03075TF-A-06	GMS00	0.75	24/0.2	3TR	15.0	17.0	19.2	21.6	783	-25	-25
A10BZ-03075TF-A-09	GPS00	0.75	24/0.2	3TR	15.0	17.0	19.2	21.6	783	-25	-25
A10BZ-07075TF-A-06	GMT00	0.75	24/0.2	7TR	19.9	22.3	24.4	27.4	1329	-32	-32
A10BZ-07075TF-A-09	GPT00	0.75	24/0.2	7TR	19.9	22.3	24.4	27.4	1329	-32	-32
A10BZ-12075TF-A-06	GMU00	0.75	24/0.2	12TR	26.9	29.7	32.0	35.8	2258	-50S	-50
A10BZ-12075TF-A-09	GPU00	0.75	24/0.2	12TR	26.9	29.7	32.0	35.8	2258	-50S	-50
A10BZ-01010TF-B-06	GMR01	1.0	32/0.2	1TR	8.9	10.2	12.6	14.5	305	-20S	-20S
A10BZ-01010TF-B-09	GPR01	1.0	32/0.2	1TR	8.9	10.2	12.6	14.5	305	-20S	-20S

## For black outer sheath insert suffix -02, for blue outer sheath insert suffix -06, for grey outer sheath insert suffix -09.

(QD) = Quad.

For further technical information please refer to page 6:32.

# Fibre Optic Cables

Tight Buffered Armoured Industrial Cable



## Application

Anixter armoured cables are designed for use where mechanical protection is required on offshore platforms, drilling rigs and onshore petrochemical plants. This range of cables can be exposed to fluids such as diesel, petrol, glycol, ethanol, white spirit and ASTM oil 2. The resistance to these fluids is in accordance with DOD-STD-1678 method 8030.

## Specifications

- **Fibre Type:** 0.9mm tight buffered coded fibres
- **Fibre Colours:** Blue, orange, green, brown, grey, white, red, black, yellow, violet, pink, turquoise, blue/black, orange/black, green/black, brown, black, grey/black, white/black, red/black, brown(tan)/black, yellow/black, violet/black, pink/black, turquoise/black
- **Inner Sheath:** Flame retardant and halogen free inner sheath
- **Armour:** Galvanised steel wire braid armour
- **Outer Sheath:** Halogen free weather resistant material
- **Fire Characteristics:** Flame retardant to IEC60332-3-24 Category C

Anixter Number 370-403-	Fibre Count	Core/ Cladding µm	Maximum Attenuation 850/1300 dB/km	Bandwidth MHz/km	M.B.R. mm	Maximum Tensile Installed * N	Weight Kg/km	Temperature Rating Load °C
6LS2-04	4	62.5/125	3.2/0.8	200/600	150	640	123	-25/+70
6LS2-08	8	62.5/125	3.2/0.8	200/600	150	640	123	-25/+70
6LS2-12	12	62.5/125	3.2/0.8	200/600	150	640	123	-25/+70
6LS2-16	16	62.5/125	3.2/0.8	200/600	150	640	123	-25/+70
6LS2-20	20	62.5/125	3.2/0.8	200/600	150	640	123	-25/+70
6LS2-24	24	62.5/125	3.2/0.8	200/600	150	640	123	-25/+70

\* 700N maximum during installation.

The M.B.R. quoted is during installation. It can be reduced to 100mm once cable is installed.

Singlemode fibre also available upon request.

Marine and Offshore Cables

# Technical Information

Single-Core Cables, EPR Insulated

Continuous current ratings for groups of circuits (up to 6 cables bunched) for single-core EPR insulated cables, run open or enclosed. Also applicable to mica tape fire resistant types.

CURRENT RATINGS					
Nominal Conductor Area mm <sup>2</sup>	Current Rating Single Phase a.c. or d.c., or Three Phase a.c. A		Voltage Drop Per Ampere Per Metre		
			d.c.	Single Phase a.c.	Three Phase a.c.
			mV	mV	mV
1.0	17		53	53	46
1.5	21		34	34	29
2.5	30		18	18	16
4.0	40		12	12	10
6.0	51		7.6	7.6	6.6
10	71		4.5	4.5	3.9
16	95		2.7	2.7	2.3
25	125		1.7	1.7	1.5
35	155		1.2	1.2	1.1
50	190		0.96	0.98	0.87
70	240		0.67	0.69	0.63
95	290		0.48	0.52	0.49
120	340		0.38	0.42	0.43
150	385		0.31	0.36	0.38
185	440		0.25	0.32	0.34
240	520		0.19	0.27	0.31
300	590		0.15	0.24	0.29
	<b>d.c.</b>	<b>a.c.</b>			
400	690	670	0.12	0.23	0.28
500	780	720	0.093	0.22	0.27
630	890	780	0.071	0.21	0.26

Where more than six cables are bunched, a rating factor of 0.85 should be applied to the current rating.

For ambient temperatures other than 45°C, the following rating factors should be applied:

Ambient air temp °C	35	40	45	50	55	60	65	70	75	80
Rating factor	1.11	1.05	1.0	0.94	0.88	0.82	0.75	0.67	0.58	0.47

# Technical Information

Twin and Multicore Cables, EPR Insulated

Continuous current ratings for groups of circuits (up to six cables bunched) for twin and multicore EPR insulated cables, run open or enclosed. Also applicable to mica taped fire resistant types.

## CURRENT RATINGS

Nominal Conductor Area	Twin Cables			Three & Four Core Cables	
	Current Rating Single Phase a.c. or d.c.	Voltage Drop Per Ampere Per Metre		Current Rating Three Phase a.c.	Voltage Drop Per Ampere Per Metre
		d.c.	Single Phase a.c.		
mm <sup>2</sup>	A	mV	mV	A	mV
1.0	14	54	54	12	47
1.5	18	35	35	15	30
2.5	25	18	18	21	16
4.0	34	12	12	29	10
6.0	43	7.8	7.8	36	6.7
10	60	4.6	4.6	50	4.0
16	81	2.7	2.7	67	2.3
25	105	1.7	1.7	89	1.5
35	135	1.2	1.2	105	1.1
50	165	0.98	1.0	135	0.89
70	200	0.68	0.70	170	0.64
95	250	0.49	0.53	205	0.50
120	290	0.39	0.43	240	0.44
150	330	0.31	0.36	270	0.38
185	370	0.25	0.32	305	0.34
240	445	0.19	0.27	365	0.31
300	505	0.15	0.24	415	0.29

Where more than six cables are bunched, a rating factor of 0.85 should be applied to the current rating.

For ambient temperatures other than 45°C, the following rating factors should be applied:

Ambient air temp °C	35	40	45	50	55	60	65	70	75	80
Rating factor	1.11	1.05	1.0	0.94	0.88	0.82	0.75	0.67	0.58	0.47

# Technical Information

600/1000 V EPR Insulated Cables to BS6883 Armoured and Non-Armoured, Single-Core

## CABLE TYPES:

Single-Core TCU/EPR/SW4 “6571” Type 600/1000 V to BS6883

Single-Core TCU/EPR/SW4/PBWB/SW4 “6591” Type 600/1000 V to BS6883

## ELECTRICAL CHARACTERISTICS

Conductor Size	Maximum d.c. Conductor Resistance @ 20°C	Maximum a.c. Conductor Resistance @ 90°C		Reactance @ 60 Hz Single-Core Cables in Trefoil		Impedance @ 90°C, 60 Hz Single-Core Cables in Trefoil	
		Unarmoured	Armoured	Unarmoured	Armoured	Unarmoured	Armoured
mm <sup>2</sup>	ohms/km	ohms/km	ohms/km	ohms/km	ohms/km	ohms/km	ohms/km
1.5	12.2	15.6	15.6	0.178	0.222	15.6	15.6
2.5	7.56	9.64	9.64	0.165	0.207	9.64	9.64
4.0	4.70	5.99	5.99	0.159	0.196	5.99	5.99
6.0	3.11	3.97	3.97	0.150	0.184	3.97	3.97
10	1.84	2.35	2.35	0.139	0.177	2.35	2.35
16	1.16	1.48	1.48	0.132	0.161	1.48	1.49
25	0.734	0.935	0.936	0.124	0.150	0.943	0.948
35	0.529	0.673	0.674	0.120	0.145	0.684	0.689
50	0.391	0.499	0.499	0.119	0.141	0.513	0.519
70	0.270	0.344	0.344	0.113	0.134	0.362	0.369
95	0.195	0.271	0.271	0.111	0.130	0.293	0.301
120	0.154	0.214	0.214	0.108	0.127	0.240	0.249
150	0.126	0.175	0.175	0.108	0.126	0.206	0.215
185	0.100	0.140	0.140	0.108	0.126	0.177	0.188
240	0.0762	0.108	0.108	0.106	0.123	0.151	0.163
300	0.0607	0.0864	0.087	0.105	0.121	0.136	0.149
400	0.0475	0.0693	0.069	0.104	0.119	0.125	0.138
500	0.0369	0.0576	0.058	0.103	0.117	0.118	0.131
630	0.0286	0.0436	0.045	0.101	0.114	0.110	0.123

# Technical Information

600/1000 V EPR Insulated cables to BS6883 Armoured and Non-Armoured, Multicore

## CABLE TYPES:

Multicore TCU/EPR/SW4 "657\*" Type 600/1000 V to BS6883

Multicore TCU/EPR/SW4/GSWB/SW4 "658\*" Type to BS6883

## ELECTRICAL CHARACTERISTICS

Conductor Size	Maximum d.c. Conductor Resistance @ 20°C	Maximum a.c. Conductor Resistance @ 90°C	Reactance @ 60 Hz	Impedance @ 90°C, 60 Hz
mm <sup>2</sup>	ohms/km	ohms/km	ohms/km	ohms/km
1.5	12.2	15.6	0.142	15.6
1.5*	13.7	17.5	0.142	17.5
2.5	7.56	9.64	0.133	9.64
4.0	4.70	5.99	0.133	5.99
6.0	3.11	3.97	0.126	3.97
10	1.84	2.35	0.118	2.35
16	1.16	1.48	0.112	1.48
25	0.734	0.936	0.107	0.941
35	0.529	0.674	0.104	0.684
50	0.391	0.499	0.103	0.510
70	0.270	0.344	0.102	0.358
95	0.195	0.271	0.099	0.288
120	0.154	0.214	0.097	0.235
150	0.126	0.175	0.097	0.200
185	0.100	0.140	0.097	0.170
240	0.0762	0.108	0.096	0.144
300	0.0607	0.087	0.096	0.129

\* Class 5 (30/0.25mm) flexible conductors.

# Technical Information

600/1000 V MICA/EPR Insulated Fire Survival Cables to BS7917 Armoured and Non-Armoured, Multicore Only

## CABLE TYPES:

Multicore TCU/MICA/EPR/SW4 600/1000 V to BS7917

Multicore TCU/MICA/EPR/ZH/GSWB/SW4 600/1000 V to BS7917

## ELECTRICAL CHARACTERISTICS

Conductor Size	Maximum d.c. Conductor Resistance @ 20°C	Maximum a.c. Conductor Resistance @ 90°C	Reactance @ 60 Hz	Impedance @ 90°C, 60 Hz
mm <sup>2</sup>	ohms/km	ohms/km	ohms/km	ohms/km
1.5	12.2	15.6	0.152	15.6
1.5*	13.7	17.5	0.152	17.5
2.5	7.56	9.64	0.142	9.64
4.0	4.70	5.99	0.139	5.99
6.0	3.11	3.97	0.131	3.97
10	1.84	2.35	0.123	2.35
16	1.16	1.48	0.116	1.48
25	0.734	0.936	0.111	0.943
35	0.529	0.674	0.108	0.683
50	0.391	0.499	0.107	0.510
70	0.270	0.344	0.103	0.359
95	0.195	0.271	0.101	0.289
120	0.154	0.214	0.099	0.236
150	0.126	0.175	0.099	0.201
185	0.100	0.140	0.099	0.171
240	0.0762	0.108	0.097	0.145
300	0.0607	0.087	0.097	0.130

\* Class 5 (30/0.25mm) flexible conductors.



# Technical Information

150/250 V EPR and MICA/EPR Insulated Cables to BS6883/BS7917 Armoured and Non-Armoured

## CABLE TYPES:

EPR insulated 150/250 V instrumentation cable.

MICA/EPR insulated 150/250 V instrumentation cable.

## ELECTRICAL CHARACTERISTICS

Electrical Characteristic	Unit	Cable					
		Flame Retardant EPR Insulated Conductor Size (mm <sup>2</sup> )			Type Fire Resistant MICA/EPR Insulated Conductor Size (mm <sup>2</sup> )		
		0.75	1.0	1.5	0.75	1.0	1.5
Maximum d.c. conductor resistance @ 20°C	ohms/km	25.3	18.6	12.4	25.3	18.6	12.4
Maximum a.c. conductor resistance @ 90°C	ohms/km	32.3	23.7	15.9	32.3	23.7	15.9
Maximum LOOP self-inductance (up to 1kHz)	mH/km	0.860	0.819	0.778	0.912	0.867	0.823
Maximum L/R ratio	μH/ohm	21.0	27.0	38.0	22.0	29.0	40.0
<b>Maximum mutual capacitance:</b>							
Cables with collective screen only (except one-pair, one triple & one quad)	pF/m	88	96	105	80	86	94
One-pair collectively screened and all cables with individually screened pairs	pF/m	104	115	128	93	102	114
One triple/quad collectively screened and all cables with individually screened triples/quads	pF/m	92	101	111	83	91	100

Resistances for 0.75mm<sup>2</sup> (24/0.2mm) and 1.0mm<sup>2</sup> (32/0.2mm) Class 5 conductors will be as follows:

	0.75mm <sup>2</sup>	1.0mm <sup>2</sup>
Maximum d.c. conductor resistance @ 20°C ohms/km	27.2	20.4
Maximum a.c. conductor resistance @ 90°C ohms/km	34.7	26.0

# Installation Guide for Offshore Cables

## General Precautions

Cables described in this section should not be installed at temperatures below minus 15°C, nor in any situation where the cooling air temperature exceeds 75°C. The cables meet the IEE requirement concerning impervious sheathing for cables installed on decks, exposed to weather, in damp or wet situations, in machinery compartments and in general, where water condensation or harmful vapours (including oil vapour) may be present. The sheathing compounds will withstand normal handling, installation and service but in areas where mechanical stress is envisaged unarmoured cables should be fitted in pipes or conduit or trunking. Alternatively, armoured and sheathed cables should be used. Cables should be protected from avoidable risks of mechanical damage and routed away from heat sources such as boilers, hot pipes and resistors. Cable runs should be selected to avoid action from condensed moisture or drips. Cables should not be installed across expansion joints, but where this is unavoidable a proportioned loop of cable should be arranged, suitably supported and having an internal radius not less than twelve times its diameter. For services with duplicate supplies, the cables should

follow different paths and be separated as far apart as is reasonably practical. Cables and wiring for mains and emergency power, lighting, internal communications or signalling should be routed away from galleys, machinery spaces and other high fire-risk areas except when supplying equipment in those places. In situations offering considerable risk of mechanical damage, such as storage spaces, cables should be protected by steel casing, trunking or conduit if the structure or attached parts do not afford sufficient protection, even to armoured cables. Any metal casing so used should be sufficiently protected against corrosion. All cable supports and accessories should be robust and constructed from corrosion-resistant material, or suitably treated to resist corrosion. Metals or alloys with low melting points (e.g. aluminium) should not be used. Cables passing through watertight decks or bulkheads should be provided with deck-tubes, watertight glands, multi-transit assemblies, or fire-retardant packed boxes as appropriate to meet the requirements of the Authority approving the installation.

# Installation Guide for Offshore Cables

## General Precautions

Where cables pass through non-watertight bulkheads, beams or other steel structure, the holes should be glanded or bushed with non-corroding materials to prevent damage to both cables and structure. The means of fixing of conductors and terminals should be capable of withstanding the thermal and dynamic effects of short circuits. When single-core cables, having a current rating greater than 250A need to be installed close to a steel bulkhead, the clearance between cable and metal surface should be at least 50mm,

unless the cables belonging to the same a.c. circuit are installed in trefoil. In the interests of safety and circuit reliability, it is assumed that installers will adhere to the IEE Regulations and Recommendations for the Electrical Equipment of Ships and of Mobile and Fixed Offshore installations. Particular attention should be paid to recommendations concerning cables, with regard to their effect on navigational and radio equipment.

### MINIMUM BENDING RADIUS

Ideally cables should be bent as little as possible and never to radii less than the following:

Type of Cable*	Minimum Bending Radius
Instrumentation	8 x diameter
Power & Control up to 3.3/3.3 kV **	
Armoured up to 25mm D	4 x diameter
Armoured over 25mm D	6 x diameter
Unarmoured up to 10mm D	3 x diameter
Unarmoured over 10mm up to 25mm D	4 x diameter
Unarmoured over 25mm D	6 x diameter
Power cable 3.8/6.6 kV and above **	
Un-screened	12 x diameter
Screened - single-core	20 x diameter
Screened - three core	15 x diameter

\* All fire survival (FS) cables - 8 x diameter. \*\* 4 x diameter Class 2 flexible cables.

# Marine Unarmoured Power Cables - Flame Retardant



## Application

These cables are designed for use where mechanical protection is not required for fixed wiring in ships, and in mobile and fixed offshore units such as drilling rigs and oil platforms.

## Specifications

- In accordance with IEC60092-353
- **Conductor:** Class 2 tinned or plain compacted copper conductor to BS EN 60228
- **Insulation:** XLPE complying with IEC60092-351
- **Core Identification:**
  - Single-core is black
  - 2 cores are black and light blue
  - 3 cores are black, brown and light blue
  - 4 cores are black, blue, brown and white
  - 5 cores and above are white and numbered
  - Earthing core (on request) is green/yellow
- **Outer Sheath:** Zero halogen type SHF1 to IEC60092-359
- **Identification:** The legend will include the manufacturers name, voltage, number of cores and cross sectional area, and IEC60332-3A reference where applicable. The standard sheath colour is black
- **Sheath Characteristics:**
  - Oxygen index:  $> 37\%$
  - Temperature index:  $250^{\circ}\text{C}$
  - HCL emission:  $< 0.5\%$  of weight of compound @  $800^{\circ}\text{C}$  (typically  $< 0.1\%$ )
- **Fire Performance:** Flame retardant to IEC60332-3-22 Category A (reduced propagation)
- **Temperature Rating:**  $90^{\circ}\text{C}$  maximum conductor operating temperature
- **Voltage Rating:** 600/1000 V

# Marine Unarmoured Power Cables - Flame Retardant

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Approximate Overall Diameter mm	Approximate Weight kg/km	Flame Proof Stuffing Gland	
					PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>Single-Core</b>						
A10FU-010015-02	1.5	7/0.53	5.0	45	-20SS	-16/20C
A10FU-010025-02	2.5	7/0.67	6.0	60	-20SS	-16/20C
A10FU-010040-02	4	19/0.53	7.0	80	-20SS	-16/20C
A10FU-010060-02	6	19/0.64	7.5	100	-20SS	-16/20C
A10FU-010100-02	10	56/0.52	8.0	145	-20SS	-20SC
A10FU-010160-02	16	80/0.52	9.5	205	-20S	-20SC
A10FU-010250-02	25	128/0.52	11.0	310	-20S	-20C
A10FU-010350-02	35	176/0.52	12.0	410	-20	-20C
A10FU-010500-02	50	240/0.52	13.5	570	-25S	-25C
A10FU-010700-02	70	360/0.52	16.5	785	-25	-25C
A10FU-010950-02	95	496/0.52	17.5	1020	-25	-25C
A10FU-011200-02	120	624/0.52	19.5	1275	-32	-32C
A10FU-011500-02	150	768/0.52	21.5	1585	-32	-32C
A10FU-011850-02	185	960/0.52	23.5	1945	-32	-32C
A10FU-012400-02	240	1280/0.52	26.5	2495	-40	-40C
A10FU-013000-02	300	1504/0.52	29.0	3095	-40	-40C
<b>2 Core</b>						
A10FU-020015-02	1.5	7/0.53	8.5	85	-20S	-20SC
A10FU-020025-02	2.5	7/0.67	9.5	110	-20S	-20SC
A10FU-020040-02	4	19/0.53	10.5	145	-20S	-20SC
A10FU-020060-02	6	19/0.64	12.0	195	-20	-20C
A10FU-020100-02	10	56/0.52	14.0	290	-25S	-25C
A10FU-020160-02	16	80/0.52	16.0	415	-25	-25C
A10FU-020250-02	25	128/0.52	19.5	630	-32	-32C
A10FU-020350-02	35	176/0.52	22.0	850	-32	-32C
A10FU-020500-02	50	240/0.52	25.0	1165	-32	-32C
A10FU-020700-02	70	360/0.52	30.0	1620	-40	-40C
A10FU-020950-02	95	496/0.52	32.5	2100	-50	-50SC

## Marine Unarmoured Power Cables - Flame Retardant

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Approximate Overall Diameter mm	Approximate Weight kg/km	Flame Proof Stuffing Gland	
					PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>3 Core</b>						
A10FU-030015-02	1.5	7/0.53	8.5	100	-20S	-20SC
A10FU-030025-02	2.5	7/0.67	10.0	140	-20S	-20SC
A10FU-030040-02	4	19/0.53	11.5	195	-20	-20C
A10FU-030060-02	6	19/0.64	12.5	265	-20	-20C
A10FU-030100-02	10	56/0.52	14.5	395	-25	-25C
A10FU-030160-02	16	80/0.52	17.0	585	-25	-25C
A10FU-030250-02	25	128/0.52	22.1	1023	-32	-32C
A10FU-030350-02	35	176/0.52	23.5	1200	-32	-32C
A10FU-030500-02	50	240/0.52	26.0	1660	-40	-40C
A10FU-030700-02	70	360/0.52	31.0	2310	-40	-40C
A10FU-030950-02	95	496/0.52	33.5	3040	-50	-50SC
A10FU-031200-02	120	624/0.52	38.0	3815	-50	-50C
A10FU-031500-02	150	768/0.52	42.0	4740	-50	-50C
A10FU-031850-02	185	960/0.52	47.5	5840	-63	-63SC
A10FU-032400-02	240	1280/0.52	53.5	7505	-	-63C
A10FU-033000-02	300	1504/0.52	59.5	9350	-	-75SC
<b>4 Core</b>						
A10FU-040015-02	1.5	7/0.53	10.0	125	-20S	-20SC
A10FU-040025-02	2.5	7/0.67	11.0	175	-20S	-20C
A10FU-040040-02	4	19/0.53	12.5	250	-20	-20C
A10FU-040060-02	6	19/0.64	14.0	345	-25	-25C
A10FU-040100-02	10	56/0.52	16.0	510	-25	-25C
A10FU-040160-02	16	80/0.52	19.0	780	-25	-32C
A10FU-040250-02	25	128/0.52	23.0	1170	-32	-32C
A10FU-040350-02	35	176/0.52	26.0	1590	-40	-40C
A10FU-040500-02	50	240/0.52	29.5	2220	-40	-40C
A10FU-040700-02	70	360/0.52	35.5	3055	-50	-50SC
A10FU-040950-02	95	496/0.52	38.5	4045	-50	-50C
A10FU-041200-02	120	624/0.52	42.5	5075	-50	-50C
A10FU-041500-02	150	768/0.52	47.5	6330	-63	-63SC
A10FU-041850-02	185	960/0.52	53.0	7780	-	-63C
A10FU-042400-02	240	1280/0.52	59.5	9985	-	-75SC
A10FU-043000-02	300	1504/0.52	66.0	11880	-	-75C

# Marine Unarmoured Power Cables - Flame Retardant

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Approximate Overall Diameter mm	Approximate Weight kg/km	Flame Proof Stuffing Gland	
					PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>5 Core</b>						
A10FU-050015-02	1.5	7/0.53	11.0	155	-20S	-20C
A10FU-050025-02	2.5	7/0.67	12.0	210	-20	-20C
<b>7 Core</b>						
A10FU-070015-02	1.5	7/0.53	12.0	195	-20	-20C
A10FU-070025-02	2.5	7/0.67	13.0	275	-20	-20C
<b>10 Core</b>						
A10FU-100015-02	1.5	7/0.53	15.0	280	-25	-25C
<b>12 Core</b>						
A10FU-120015-02	1.5	7/0.53	15.5	320	-25	-25C
A10FU-120025-02	2.5	7/0.67	17.5	455	-25	-25C
<b>14 Core</b>						
A10FU-140015-02	1.5	7/0.53	16.5	370	-25	-25C
<b>16 Core</b>						
A10FU-160015-02	1.5	7/0.53	17.5	410	-25	-25C
<b>19 Core</b>						
A10FU-190015-02	1.5	7/0.53	18.0	470	-25	-25C
A10FU-190025-02	2.5	7/0.67	20.5	690	-32	-32C
<b>24 Core</b>						
A10FU-240015-02	1.5	7/0.53	22.0	610	-32	-32C
<b>27 Core</b>						
A10FU-270015-02	1.5	7/0.53	22.5	670	-32	-32C
A10FU-270025-02	2.5	7/0.67	25.0	970	-32	-32C
<b>30 Core</b>						
A10FU-300015-02	1.5	7/0.53	23.0	730	-32	-32C
<b>37 Core</b>						
A10FU-370015-02	1.5	7/0.53	25.0	885	-32	-32C
A10FU-370025-02	2.5	7/0.67	28.5	1335	-40	-40C

For further technical information please refer to page 6:51.

# Marine Armoured Power Cables - Flame Retardant



## Application

Suitable for drilling rigs and oil platforms, this cable is designed for fixed wiring in ships, and in mobile and fixed offshore units such as drilling rigs and oil platforms. This cable is particularly designed for use in areas regularly occupied by people, such as accommodation facilities, control rooms and computer suites, which assists in reducing smoke and noxious fumes and where vital, sensitive equipment may be damaged by acid forming gases.

## Specifications

- In accordance with IEC60092-353
- **Conductor:** Class 2 tinned or plain compacted copper conductor to BS EN 60228
- **Insulation:** XLPE complying with IEC60092-351
- **Core Identification:**
  - Single-core is black
  - 2 cores are black and light blue
  - 3 cores are black, brown and light blue
  - 4 cores are black, blue, brown and white
  - 5 cores and above are white and numbered
  - Earthing core (on request) is green/yellow
- **Armour:** Tinned or plain copper wire braid
- **Outer Sheath:** Zero halogen type SHF1 to IEC60092-359
- **Identification:** The legend will include the manufacturers name, voltage, number of cores and cross sectional area, and IEC60332-3A reference where applicable. The standard sheath colour is black
- **Sheath Characteristics:**
  - Oxygen index:  $> 37\%$
  - Temperature index:  $250^{\circ}\text{C}$
  - HCL emission:  $< 0.5\%$  of weight of compound @  $800^{\circ}\text{C}$  (typically  $< 0.1\%$ )
- **Fire Performance:** Flame retardant to IEC60332-3-22 Category A (reduced propagation)
- **Temperature Rating:**  $90^{\circ}\text{C}$  maximum conductor operating temperature
- **Voltage Rating:** 600/1000 V



# Marine Armoured Power Cables - Flame Retardant

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Overall Diameter mm		Approximate Weight kg/km	Flame Proof Stuffing Gland	
			min	max		PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>Single-Core</b>							
A10FU1-010015-02	1.5	7/0.53	5.82	6.0	66	-20SS	-16/20C
A10FU1-010025-02	2.5	7/0.67	6.30	6.5	80	-20SS	-16/20C
A10FU1-010040-02	4	19/0.53	6.79	7.0	100	-20SS	-16/20C
A10FU1-010060-02	6	19/0.64	7.27	7.5	125	-20SS	-16/20C
A10FU1-010100-02	10	56/0.52	8.73	9.0	195	-20S	-20SC
A10FU1-010160-02	16	80/0.52	9.70	10.0	265	-20S	-20SC
A10FU1-010250-02	25	128/0.52	11.64	12.0	375	-20	-20C
A10FU1-010350-02	35	176/0.52	12.61	13.0	480	-20	-20C
A10FU1-010500-02	50	240/0.52	15.03	15.5	690	-25	-25C
A10FU1-010700-02	70	360/0.52	17.46	18.0	925	-25	-25C
A10FU1-010950-02	95	496/0.52	18.91	19.5	1180	-25	-25C
A10FU1-011200-02	120	624/0.52	20.37	21.0	1445	-32	-32C
A10FU1-011500-02	150	768/0.52	23.31	23.0	1775	-32	-32C
A10FU1-011850-02	185	960/0.52	24.73	25.5	2160	-32	-32C
A10FU1-012400-02	240	1280/0.52	27.16	28.0	2730	-40	-40C
A10FU1-013000-02	300	1504/0.52	30.07	31.0	3360	-40	-40C
<b>2 Core</b>							
A10FU1-020015-02	1.5	7/0.53	9.2	9.5	120	-20S	-20SC
A10FU1-020025-02	2.5	7/0.67	9.7	10.0	150	-20S	-20SC
A10FU1-020040-02	4	19/0.53	11.15	11.5	245	-20S	-20SC
A10FU1-020060-02	6	19/0.64	12.12	12.5	305	-20	-20C
A10FU1-020100-02	10	56/0.52	15.03	15.5	465	-25S	-25C
A10FU1-020160-02	16	80/0.52	16.97	17.5	650	-25	-25C
A10FU1-020250-02	25	128/0.52	20.37	21.0	960	-32	-32C
A10FU1-020350-02	35	176/0.52	22.79	23.5	1240	-32	-32C
A10FU1-020500-02	50	240/0.52	25.70	26.5	1645	-40	-40C
A10FU1-020700-02	70	360/0.52	30.55	31.5	2280	-40	-40C
A10FU1-020950-02	95	496/0.52	32.98	34.0	2870	-40	-50SC

## Marine Armoured Power Cables - Flame Retardant

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Overall Diameter		Approximate Weight kg/km	Flame Proof Stuffing Gland	
			mm min	max		PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>3 Core</b>							
A10FU1-030015-02	1.5	7/0.53	9.7	10.0	145	-20S	-20SC
A10FU1-030025-02	2.5	7/0.67	10.67	11.0	190	-20S	-20SC
A10FU1-030040-02	4	19/0.53	11.64	12.0	250	-20	-20C
A10FU1-030060-02	6	19/0.64	13.09	13.5	360	-20	-20C
A10FU1-030100-02	10	56/0.52	16.00	16.5	545	-25S	-25C
A10FU1-030160-02	16	80/0.52	17.94	18.5	785	-25	-25C
A10FU1-030250-02	25	128/0.52	21.38	22.5	1170	-32	-32C
A10FU1-030350-02	35	176/0.52	24.25	25.0	1530	-32	-32C
A10FU1-030500-02	50	240/0.52	27.16	28.0	2080	-40	-40C
A10FU1-030700-02	70	360/0.52	32.01	33.0	2830	-50S	-50SC
A10FU1-030950-02	95	496/0.52	34.43	35.5	3740	-50S	-50SC
A10FU1-031200-02	120	624/0.52	38.8	40.0	4630	-50	-50C
A10FU1-031500-02	150	768/0.52	42.68	44.0	5700	-50	-63SC
A10FU1-031850-02	185	960/0.52	48.5	50.0	6990	-63	-63SC
A10FU1-032400-02	240	1280/0.52	53.83	55.5	8880	-63	-
A10FU1-033000-02	300	1504/0.52	59.65	61.5	10950	-75S	-
<b>4 Core</b>							
A10FU1-040015-02	1.5	7/0.53	10.18	10.5	175	-20S	-20SC
A10FU1-040025-02	2.5	7/0.67	11.64	12.0	230	-20	-20C
A10FU1-040040-02	4	19/0.53	12.61	13.0	300	-20	-20C
A10FU1-040060-02	6	19/0.64	14.55	15.0	475	-25	-25C
A10FU1-040100-02	10	56/0.52	16.97	17.5	685	-25	-25C
A10FU1-040160-02	16	80/0.52	19.88	20.5	980	-32	-32C
A10FU1-040250-02	25	128/0.52	23.76	24.5	1460	-32	-32C
A10FU1-040350-02	35	176/0.52	26.67	27.5	1940	-40	-40C
A10FU1-040500-02	50	240/0.52	30.07	31.0	2640	-40	-40C
A10FU1-040700-02	70	360/0.52	36.37	37.5	3710	-50S	-50C
A10FU1-040950-02	95	496/0.52	39.28	40.5	4810	-50	-50C
A10FU1-041200-02	120	624/0.52	43.65	45.0	5960	-63S	-63SC
A10FU1-041500-02	150	768/0.52	48.01	49.5	7370	-63S	-63SC
A10FU1-041850-02	185	960/0.52	53.35	55.0	9040	-63	-
A10FU1-042400-02	240	1280/0.52	59.65	61.5	11510	-75S	-
A10FU1-043000-02	300	1504/0.52	65.98	68.0	14270	-75	-

# Marine Armoured Power Cables - Flame Retardant

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Nominal Cond Stranding #/mm	Overall Diameter mm		Approximate Weight kg/km	Flame Proof Stuffing Gland	
			min	max		PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>5 Core</b>							
A10FU1-050015-02	1.5	7/0.53	11.15	11.5	205	-20S	-20SC
A10FU1-050025-02	2.5	7/0.67	12.61	13.0	270	-20	-20C
<b>7 Core</b>							
A10FU1-070015-02	1.5	7/0.53	12.12	12.5	250	-20	-20C
A10FU1-070025-02	2.5	7/0.67	14.06	14.5	380	-25	-25C
<b>10 Core</b>							
A10FU1-10015-02	1.5	7/0.53	16.00	16.5	400	-25	-25C
<b>12 Core</b>							
A10FU1-120015-02	1.5	7/0.53	16.49	17.0	440	-25	-25C
A10FU1-120025-02	2.5	7/0.67	17.94	18.5	585	-25	-25C
<b>19 Core</b>							
A10FU1-190015-02	1.5	7/0.53	19.4	20.0	620	-32	-32C
A10FU1-190025-02	2.5	7/0.67	21.82	22.5	870	-32	-32C
<b>27 Core</b>							
A10FU1-270015-02	1.5	7/0.53	23.28	24.0	850	-32	-32C
A10FU1-270025-02	2.5	7/0.67	25.70	26.5	1170	-40	-40C
<b>37 Core</b>							
A10FU1-370015-02	1.5	7/0.53	25.70	26.5	1090	-40	-40C
A10FU1-370025-02	2.5	7/0.67	29.10	30.0	1530	-40	-40C

For further technical information please refer to page 6.51.

# Marine Armoured Instrumentation Cables - Flame Retardant



## Application

Anixter armoured cables are designed for use where mechanical protection is required for fixed wiring in ships, and in mobile and fixed offshore units such as drilling rigs and oil platforms. These cables are particularly designed for regularly occupied areas such as accommodation facilities, control rooms and computer suites. This is essential in reducing smoke and noxious fumes, and helps during evacuation procedures and fire fighting duties, and also helps to protect vital and sensitive equipment.

## Specifications

- In accordance with IEC60092-375 60092-350
- **Conductor:** Class 2 tinned or plain conductor to BS EN 60228
- **Insulation:** XLPE complying with IEC60092-351
- **Core Identification:**  
Pairs are light blue, black and numbered  
Triples are light blue, black, brown and numbered
- **Screening:** Aluminium mylar tape in contact with tinned copper drain wire
- **Armour:** Tinned or plain copper wire braid
- **Outer Sheath:** Zero halogen type SHF1 to IEC60092-359
- **Identification:** The legend will include the manufacturers name, voltage, number of cores and cross sectional area, and IEC60332-3A reference where applicable. The standard sheath colour is grey
- **Sheath Characteristics:**  
Oxygen index: >37%  
Temperature index: 250°C  
HCL emission: <0.5% of weight of compound @ 800°C (typically <0.1%)
- **Fire Performance:** Flame retardant to IEC60332-3-22 Category A (reduced propagation)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 250 V

# Marine Armoured Instrumentation Cables - Flame Retardant

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Number of Pairs/Triples	Approximate Overall Diameter mm	Approximate Weight kg/km	Flame Proof Stuffing Gland	
					PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
A10FU2-01075-B-09	0.75	1PR	8.5	100	-20S	-20SC
A10FU2-02075-B-09	0.75	2PR	12.5	175	-20	-20C
A10FU2-04075-B0-9	0.75	4PR	14.5	250	-25S	-25C
A10FU2-07075-B-09	0.75	7PR	17.5	355	-25	-25C
A10FU2-10075-B-09	0.75	10PR	20.5	505	-32	-32C
A10FU2-14075-B-09	0.75	14PR	22.5	640	-32	-32C
A10FU2-19075-B-09	0.75	19PR	25.5	810	-32	-32C
A10FU2-24075-B-09	0.75	24PR	28.5	1000	-40	-40C
A10FU2-30075-B-09	0.75	30PR	31.5	1195	-40	-40C
A10FU2-01015-B-09	1.5	1PR	10.0	130	-20S	-20SC
A10FU2-02015-B-09	1.5	2PR	14.5	245	-25S	-25C
A10FU2-04015-B-09	1.5	4PR	17.0	355	-25	-25C
A10FU2-07015-B-09	1.5	7PR	20.5	530	-32	-32C
A10FU2-10015-B-09	1.5	10PR	23.5	725	-32	-32C
A10FU2-14015-B-09	1.5	14PR	26.5	980	-40	-40C
A10FU2-19015-B-09	1.5	19PR	30.0	1255	-40	-40C
A10FU2-24015-B-09	1.5	24PR	33.0	1535	-50S	-50SC
A10FU2-30015-B-09	1.5	30PR	37.0	1940	-50S	-50SC
<b>Individual Screen</b>						
A10FU2-02075-A-09	0.75	2PR	13.0	180	-20	-20C
A10FU2-04075-A-09	0.75	4PR	15.0	265	-25	-25C
A10FU2-02015-A-09	1.5	2PR	14.5	250	-25	-25C
A10FU2-04015-A-09	1.5	4PR	17.5	375	-25	-25C
<b>Individual and Collective Screen</b>						
A10FU2-02075-AB-09	0.75	2PR	13.5	195	-20	-25C
A10FU2-04075-AB-09	0.75	4PR	15.5	280	-20	-25C
A10FU2-02015-AB-09	1.5	2PR	15.0	265	-25	-25C
A10FU2-04015-AB-09	1.5	4PR	18.0	400	-25	-25C

For further technical information please refer to page 6:53.

# Marine Armoured Power Cables - Fire Resistant



## Application

Anixter armoured fire resistant cables are designed for use where additional mechanical protection (armour) is required for fixed wiring in ships, and in mobile and fixed offshore units such as drilling rigs and oil platforms. These cables are particularly designed for regularly occupied areas such as accommodation facilities, control rooms and computer suites. This is essential in reducing smoke and noxious fumes, and helps during evacuation procedures and fire fighting duties, and also helps to protect vital and sensitive equipment. These cables are also used where circuit integrity is essential under fire conditions e.g. safety and emergency lighting, fire pumps, shut down systems, communications systems, gas detectors, alarms etc.

## Specifications

- In accordance with IEC60092-353 and with fire resistant properties relevant to the internationally recognised test of IEC60331
- **Conductor:** Class 2 tinned or plain copper compacted conductor to BS EN 60228
- **Insulation:** Mica Glass Tape, XLPE complying with IEC60092-351
- **Core Identification:**
  - 2 cores are black and light blue
  - 3 cores are black, brown and light blue
  - 4 cores black, blue, brown and white
  - 5 cores and above are white and numbered
  - Earthing core (on request) is green/yellow
- **Armour:** Tinned or plain copper wire braid
- **Outer Sheath:** Zero halogen type SHF1 to IEC60092-359
- **Identification:** The legend will include the manufacturers name, voltage, number of cores and cross sectional area, and IEC60331 and IEC60332-3A reference where applicable. The standard sheath colour is black
- **Sheath Characteristics:**
  - Oxygen index: >37%
  - Temperature index: 250°C
  - HCL emission: <0.5% of weight of compound @ 800°C (typically <0.1%)
- **Fire Performance:** Flame retardant to IEC60332-3-22 Category A (reduced propagation). Fire resistant to IEC60331 (750°C for three hours)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 600/1000 V

# Marine Armoured Power Cables - Fire Resistant

Low Smoke Zero Halogen TAC. MGT. XLPE. CWB. ZH 600/1000 V

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Number of Cores	Approximate Overall Diameter mm	Approximate Weight kg/km	Flame Proof Stuffing Gland	
					PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>2 Core</b>						
A10FU3-020015-02	1.5	2	11.0	150	-20	-20C
A10FU3-020025-02	2.5	2	11.5	180	-20	-20C
A10FU3-020040-02	4	2	12.5	274	-20	-20C
<b>3 Core</b>						
A10FU3-030015-02	1.5	3	11.5	180	-20	-20C
A10FU3-030025-02	2.5	3	12.5	220	-20	-20C
A10FU3-030040-02	4	3	13.5	285	-20	-25C
A10FU3-030060-02	6	3	15.5	435	-25	-25C
A10FU3-030100-02	10	3	17.5	585	-25	-25C
A10FU3-030160-02	16	3	20.5	851	-32	-32C
<b>4 Core</b>						
A10FU3-040015-02	1.5	4	12.5	210	-20	-20C
A10FU3-040025-02	2.5	4	13.5	270	-20	-25C
A10FU3-040040-02	4	4	15.5	380	-25	-25C
A10FU3-040060-02	6	4	17.0	525	-25	-25C
A10FU3-040100-02	10	4	19.0	730	-25	-32C
A10FU3-040160-02	16	4	22.0	1050	-32	-32C

For further technical information please refer to page 6:51.

# Marine Armoured Instrumentation Cables - Fire Resistant Collective Screen, Individual Screen, Individual & Collective Screen

Low Smoke Zero Halogen TAC. MGT. XLPE. ZH. CWB. ZH 250 V



## Application

Anixter armoured fire resistant cables are designed for use where mechanical protection is required for fixed wiring in ships, and in mobile and fixed offshore units such as drilling rigs and oil platforms. These cables are particularly designed for regularly occupied areas such as accommodation facilities, control rooms and computer suites. This is essential in reducing smoke and noxious fumes, and helps during evacuation procedures and fire fighting duties, and also helps to protect vital and sensitive equipment. These cables are also used where circuit integrity is essential under fire conditions e.g. safety and emergency lighting, fire pumps, shut down systems, communications systems, gas detectors, alarms etc.

## Specifications

- In accordance with IEC60092-375, 60092-350 with fire resistant properties relevant to the internationally recognised test of IEC60331
- **Conductor:** Class 2 tinned or plain copper conductor to BS EN 60228
- **Insulation:** Mica Glass Tape, XLPE complying with IEC60092-351
- **Core Identification:**  
Pairs are light blue, black and numbered.  
Triples are light blue, black, brown and numbered
- **Screening:** Aluminium mylar tape in contact with tinned copper drain wire
- **Inner Sheath:** Zero halogen type SHF1 to IEC60092-359
- **Armour:** Tinned or plain copper wire braid
- **Outer Sheath:** Zero halogen type SHF1 to IEC60092-359
- **Identification:** The legend will include the manufacturers name, voltage, number of cores and cross sectional area, and IEC60331 and IEC60332-3A reference where applicable. The standard sheath colour is grey
- **Sheath Characteristics:**  
Oxygen index: >37%  
Temperature index: 250°C  
HCL emission: <0.5% of weight of compound @ 800°C (typically <0.1%)
- **Fire Performance:** Flame retardant to IEC60332-3-22 Category A (reduced propagation)  
Fire resistant to IEC60331 (750°C for three hours)
- **Temperature Rating:** 90°C maximum conductor operating temperature
- **Voltage Rating:** 250 V



# Marine Armoured Instrumentation Cables - Fire Resistant Collective Screen, Individual Screen, Individual & Collective Screen

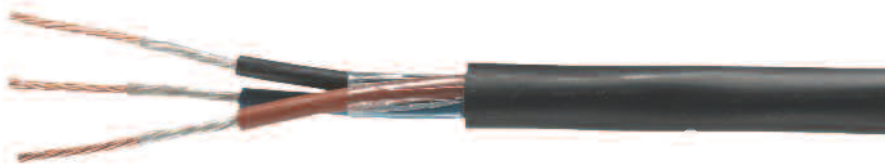
Low Smoke Zero Halogen TAC. MGT. XLPE. ZH. CWB. ZH 250 V

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Number of Pairs	Approximate Overall Diameter mm	Approximate Weight kg/km	Flame Proof Stuffing Gland	
					PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>Collective Screen</b>						
A10FU4-01075-B-09	0.75	1	9.5	120	-20S	-20SC
A10FU4-02075-B-09	0.75	2	14.5	205	-20	-25C
A10FU4-04075-B-09	0.75	4	16.5	290	-25	-25C
A10FU4-01015-B-09	1.5	1	11.0	155	-20	-20C
A10FU4-02015-B-09	1.5	2	17.0	295	-25	-25C
A10FU4-04015-B-09	1.5	4	19.5	430	-25	-32C
<b>Individual Screen</b>						
A10FU4-02075-A-09	0.75	2	15.0	210	-25	-25C
A10FU4-04075-A-09	0.75	4	17.0	310	-25	-25C
A10FU4-02015-A-09	1.5	2	17.5	300	-25	-25C
A10FU4-04015-A-09	1.5	4	20.0	445	-32	-32C
<b>Individual and Collective Screen</b>						
A10FU4-02075-AB-09	0.75	2	15.5	230	-25	-25C
A10FU4-04075-AB-09	0.75	4	17.5	330	-25	-25C
A10FU4-02015-AB-09	1.5	2	18.0	315	-25	-25C
A10FU4-04015-AB-09	1.5	4	20.5	475	-32	-32C

For further technical information please refer to page 6:53.

# Marine Unarmoured Power Cables - Fire Resistant

Low Smoke Zero Halogen TAC. MGT. XLPE. ZH 600/1000 V



## Application

Anixter unarmoured fire resistant cables are designed for use where mechanical protection is not required for fixed wiring in ships, and in mobile and fixed offshore units such as drilling rigs and oil platforms. These cables are particularly designed for regularly occupied areas such as accommodation facilities, control rooms and computer suites. This is essential in reducing smoke and noxious fumes, and helps during evacuation procedures and fire fighting duties, and also helps to protect vital and sensitive equipment. These cables are also used where circuit integrity is essential under fire conditions e.g. safety and emergency lighting, fire pumps, shut down systems, communications systems, gas detectors, alarms etc.

## Specifications

- In accordance with IEC60092-353 with fire resistant properties relevant to the internationally recognised test of IEC60331
- **Conductor:** Class 2 tinned or plain copper compacted conductor to BS EN 60228
- **Insulation:** Mica Glass Tape, XLPE complying with IEC60092-351
- **Core Identification:**
  - 2 cores are black and light blue
  - 3 cores are black, brown and light blue
  - 4 cores black, blue, brown and white
  - 5 cores and above are white and numbered
  - Earthing core (on request) is green/yellow
- **Outer Sheath:** Zero halogen type SHF1 to IEC60092-359
- **Identification:** The legend will include the manufacturers name, voltage, number of cores and cross sectional area, and IEC60331 and IEC60332-3A reference where applicable. The standard sheath colour is black
- **Sheath Characteristics:**
  - Oxygen index:  $>37\%$
  - Temperature index:  $250^{\circ}\text{C}$
  - HCL emission:  $<0.5\%$  of weight of compound @  $800^{\circ}\text{C}$  (typically  $<0.1\%$ )
- **Fire Performance:** Flame retardant to IEC60332-3-22 Category A (reduced propagation)  
Fire resistant to IEC60331 ( $750^{\circ}\text{C}$  for three hours)
- **Temperature Rating:**  $90^{\circ}\text{C}$  maximum conductor operating temperature
- **Voltage Rating:** 600/1000 V

# Marine Unarmoured Power Cables - Fire Resistant

Low Smoke Zero Halogen TAC. MGT. XLPE. ZH 600/1000 V

Anixter Number	Nominal Cond Area mm <sup>2</sup>	Number of Cores	Approximate Overall Diameter mm	Approximate Weight kg/km	Flame Proof Stuffing Gland	
					PRYSMIAN EIAT-A2EX	CMP EIAT-A2F
<b>2 Core</b>						
A10FU5-020015-02	1.5	2	9.5	95	-20S	-20SC
A10FU5-020025-02	2.5	2	10.5	120	-20	-20C
A10FU5-020040-02	4	2	11.5	160	-20	-20C
<b>3 Core</b>						
A10FU5-030015-02	1.5	3	10.0	120	-20S	-20SC
A10FU5-030025-02	2.5	3	11.5	160	-20	-20C
A10FU5-030040-02	4	3	12.5	220	-20	-20C
A10FU5-030060-02	6	3	14.0	290	-25	-25C
A10FU5-030100-02	10	3	16.0	415	-25	-25C
A10FU5-030160-02	16	3	18.5	615	-25	-25C
<b>4 Core</b>						
A10FU5-040015-02	1.5	4	11.5	150	-20	-20C
A10FU5-040025-02	2.5	4	12.5	205	-20	-20C
A10FU5-040040-02	4	4	14.0	280	-25	-25C
A10FU5-040060-02	6	4	15.5	370	-25	-25C
A10FU5-040100-02	10	4	17.5	540	-25	-25C
A10FU5-040160-02	16	4	20.5	810	-32	-32C

For further technical information please refer to page 6:51.

# Technical Information - IEC60092 Marine Cables

Single-Core Cables

Continuous current ratings for groups of circuits (up to 6 cables bunched) for single-core XLPE or EPR insulated cables, run open or enclosed, and are also applicable to mica tape fire resistant types.

## CURRENT RATINGS

Nominal Conductor Area mm <sup>2</sup>	Current Rating Single Phase a.c. or d.c., or Three Phase a.c. A		Voltage Drop Per Ampere Per Metre		
			d.c.	Single Phase a.c.	Three Phase a.c.
			mV	mV	mV
1.0	17		53	53	46
1.5	21		34	34	29
2.5	30		18	18	16
4.0	40		12	12	10
6.0	51		7.6	7.6	6.6
10	71		4.5	4.5	3.9
16	95		2.7	2.7	2.3
25	125		1.7	1.7	1.5
35	155		1.2	1.2	1.1
50	190		0.96	0.98	0.87
70	240		0.67	0.69	0.63
95	290		0.48	0.52	0.49
120	340		0.38	0.42	0.43
150	385		0.31	0.36	0.38
185	440		0.25	0.32	0.34
240	520		0.19	0.27	0.31
300	590		0.15	0.24	0.29
	<b>d.c.</b>	<b>a.c.</b>			
400	690	670	0.12	0.23	0.28
500	780	720	0.093	0.22	0.27
630	890	780	0.071	0.21	0.26

Where more than six cables are bunched, a rating factor of 0.85 should be applied to the current rating.

For ambient temperatures other than 45°C, the following rating factors should be applied:

Ambient air temp °C	35	40	45	50	55	60	65	70	75	80
Rating factor	1.11	1.05	1.0	0.94	0.88	0.82	0.75	0.67	0.58	0.47

# Technical Information - IEC60092 Marine Cables (continued)

## Multicore Cables

Continuous current ratings for groups of circuits (up to 6 cables bunched) for twin and multicore XLPE or EPR insulated cables, run open or enclosed, and are also applicable to mica taped fire resistant types.

### CURRENT RATINGS

Nominal Conductor Area	Twin Cables			Three & Four Core Cables	
	Current Rating Single Phase a.c. or d.c.	Voltage Drop Per Ampere Per Metre		Current Rating Three Phase a.c.	Voltage Drop Per Ampere Per Metre
		d.c.	Single Phase a.c.		
mm <sup>2</sup>	A	mV	mV	A	mV
1.0	14	54	54	12	47
1.5	18	35	35	15	30
2.5	25	18	18	21	16
4.0	34	12	12	29	10
6.0	43	7.8	7.8	36	6.7
10	60	4.6	4.6	50	4.0
16	81	2.7	2.7	67	2.3
25	105	1.7	1.7	89	1.5
35	135	1.2	1.2	105	1.1
50	165	0.98	1.0	135	0.89
70	200	0.68	0.70	170	0.64
95	250	0.49	0.53	205	0.50
120	290	0.39	0.43	240	0.44
150	330	0.31	0.36	270	0.38
185	370	0.25	0.32	305	0.34
240	445	0.19	0.27	365	0.31
300	505	0.15	0.24	415	0.29

Where more than six cables are bunched, a rating factor of 0.85 should be applied to the current rating.

For ambient temperatures other than 45°C, the following rating factors should be applied:

Ambient air temp °C	35	40	45	50	55	60	65	70	75	80
Rating factor	1.11	1.05	1.0	0.94	0.88	0.82	0.75	0.67	0.58	0.47

# Technical Information - Cable Types

XLPE Insulated IEC60092 Type XAI(c) 250 Volts Instrumentation Cable

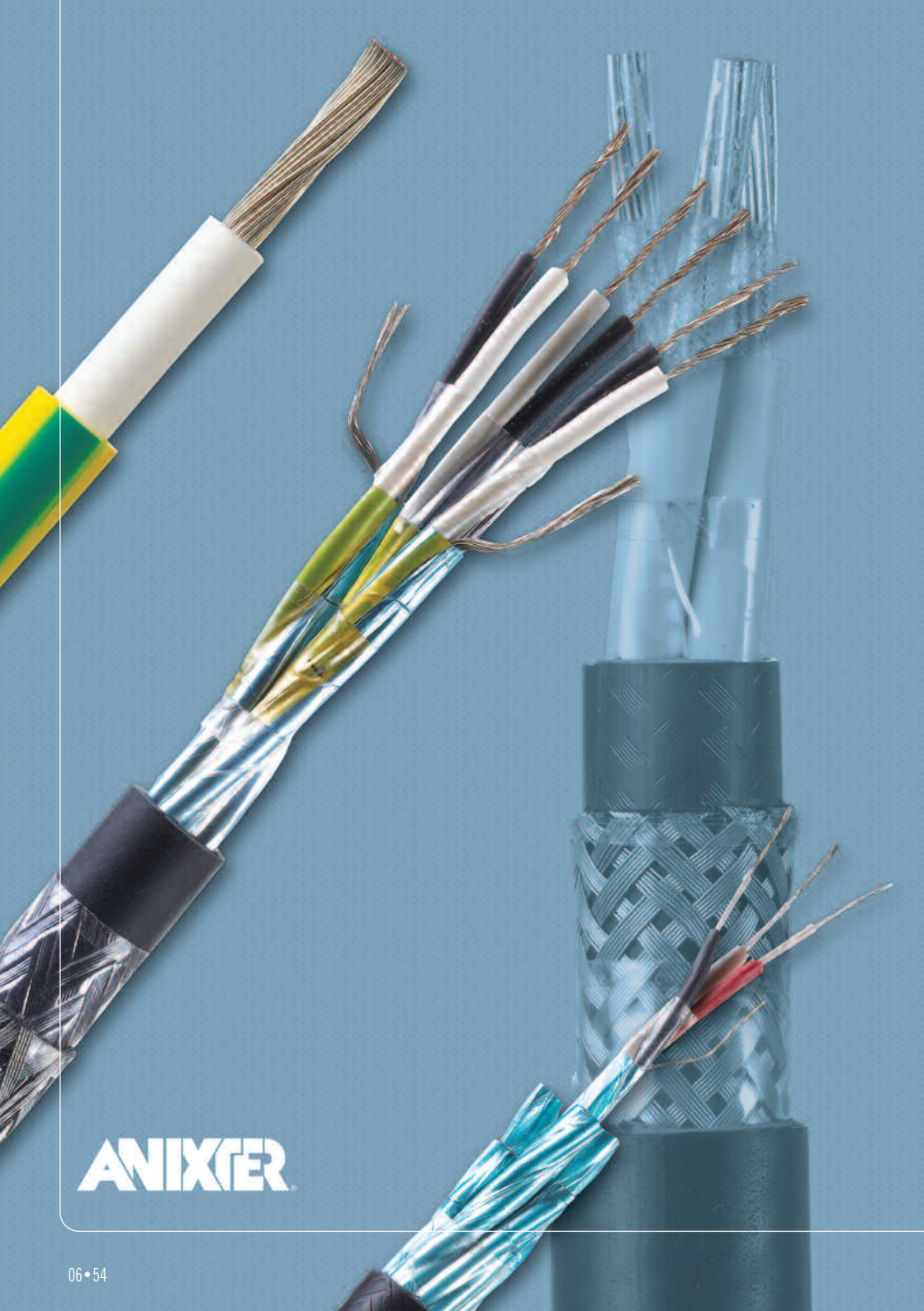
## Electrical Characteristics

Electrical Characteristic	Unit	Nominal Conductor Area	
		0.75mm <sup>2</sup>	1.5mm <sup>2</sup>
Maximum d.c. conductor resistance @ 20°C	ohms/km	25.2	12.4
Maximum d.c. loop conductor resistance @ 20°C	ohms/km	50.4	24.8
Maximum a.c. conductor resistance @ 90°C	ohms/km	32.1	15.8
Nominal LOOP inductance	mH/km	0.72	0.66
Nominal L/R ratio	μH/ohm	15	27
Maximum mutual capacitance on all cables with individually screened pairs/triples	pF/m	120	100
Maximum mutual capacitance on all cables with collective screen	pF/m	95	110

## Cables to IEC60092

Type of Cable*	Minimum Bending Radius
Instrumentation	8 x diameter
<b>Power and control up to 3.3/3.3kV</b>	
Unarmoured	4 x diameter
Armoured	4 x diameter

\* All fire survival (FS) cables - 8 x diameter.



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