

**MACLEAN**

A DistributionNOW Company

**Offshore  
Cable Catalogue**  
Rev. 07



A DistributionNOW Company

## **The hazardous area electrical and cables specialist**

MacLean Electrical, a trading division of MacLean International Group, is a specialist distributor, providing cables and industrial electrical products for harsh and hazardous applications in a wide range of extreme temperatures and conditions around the world.

A subsidiary company of DistributionNOW, global specialists in supply chain management, we are strategically based throughout the UK and Europe with bases in Aberdeen, Dingwall, Great Yarmouth, Norway and Holland.

We take pride in our core values – Quality, Value, Service, Integrity and Reliability. A hard-working, 'do it right first time' ethos is woven throughout the business, and together with our values this underpins the exceptional service clients receive from every member of our staff.

MacLean Electrical has earned a reputation as one of the world's leading electrical and cable distribution businesses both for MRO (Maintenance, Repair & Operations) and major project supply.

## **Going the extra mile**

Approved by and supporting major operators, contractors and OEMs, MacLean Electrical holds exclusive supply agreements and "preferred vendor status" with many leading companies. Coupled with our ongoing investment in product inventory and personnel, our commitment to customer service and the willingness to 'go the extra mile' is undoubtedly key to our clients' confidence in us.

## **International Projects**

Our International Projects Group provides major projects world-wide with packages of cables and electrical products to specification from a single experienced source.

MacLean's International Projects Group has a wealth of experience in managing multi-million-pound turnkey cable and electrical contracts world-wide. From the initial liaison with engineering and design, through to delivery, MacLean Electrical takes full responsibility for all aspects of the contract, including expediting, technical support, inspection/testing and logistical support. We also provide an excellent after sales service, including back-up inventory, detailed project data books and sales analysis at no additional cost.

## **Quality Standards**

Our Quality Management System is assessed and approved to the latest BS EN ISO 9001:2015 standard. Stringent warehouse control systems are in place to ensure full traceability of all product, with records kept for a minimum of 10 years.

We are fully registered on industry qualification platforms including Achilles (FPAL, JQS and UVDB) and EPIM (Norway).

## **The bigger picture**

DistributionNOW Europe has strategic bases throughout the UK and Europe serving the onshore & offshore energy, petrochemical, mining, renewable energy, power & utilities, process, pharmaceutical, shipbuilding and marine industries around the world. With an impressive experience portfolio, we deliver an equally impressive and wide product and service offering encompassing cable, electrical products, valves, PPE, tooling and MRO.

# International Offshore and Marine Catalogue Index

## SECTION 1 - Contents & Information

## Page Number

Standard Products in the MacLean Electrical range	03
MacLean Electrical company details and contacts	04
Explanation of Flame Retardant / Fire Resistant characteristics	05
UKOOA information and codes	06
MacLean Electrical Cable Product Codes	06

## SECTION 2 - British Specification

### Power & Control

WE / WF BS 6883 EPR / SW4	08
WA / WB BS 6883 EPR / SW4 / GSWB (PBWB) / SW4	14
YD / YC BS 7917 MT / EPR / SW4 / GSWB (PBWB) / SW4	20

### Instrumentation

KG / KJ BS 6883 EPR / O-A / SW4 / GSWB / SW4	26
KH / KK BS 6883 EPR / IND / SW4 / GSWB / SW4	30
GL / GN BS 7917 MT / EPR / O-A / SW4 / GSWB / SW4	34
GM / GP BS 7917 MT / EPR / IND / SW4 / GSWB / SW4	38

## SECTION 3 - Norwegian Specification

Standards and tests	42
Abbreviations - Code Designations	43

### Power & Control

UX 0.6/1 kV:Type P108	44
RFOU 0.6/1 kV:Type P101	46
BFOU 0.6/1 kV:Type P105	50

### Instrumentation

RFOU (c) 250V:Type S102	58
RFOU (i) 250V:Type S101	60
BFOU (c) 250V:Type S104	62
BFOU (i) 250V:Type S103	64

## Our Product Range

The cables illustrated in this catalogue represent only a very small part of the range of products that can be supplied by MacLean Electrical for Offshore, Marine and Onshore applications.

We will be pleased to supply catalogues / data sheets for any other cable types that you specify.

1

## Other Products Supplied

### CABLES from MacLean Electrical

Flame Retardant, Fire Resistant, LSOH Power, Control, Instrumentation and Fibre Optic to IEC, BS, NEK, IEEE 1580 and bespoke specifications for the following applications:

#### OFFSHORE

BS 6883  
 BS 7917  
 NEK TS 606  
 IEEE 1580 - Type P  
 Fibre Optic

#### MARINE

IEC 60092-350  
 IEC 60092-353  
 IEC 60092-354  
 IEC 60092-376

#### ONSHORE

IEC 60502  
 EN 50288-7  
 BS 5467  
 BS 6724  
 Thermocouple  
 Fibre Optic  
 Telecoms

### ELECTRICAL PRODUCTS from MACLEAN ELECTRICAL

For use in industrial safe area, zone 1, 2 & 22 applications in a wide range of extreme temperatures.

All Major European Makes Supplied - Single Product or Complete Project Bulk Material Packages Material Sourcing, Supply & Management - Certification, Documentation & Translation.

- CABLE ACCESSORIES - glands, cleats, joints, terminations, transits, adaptors, plugs, marking systems, stainless steel ties and banding, tiles & other consumables
- CABLE SUPPORTS - trays, ladders & supports in galvanised steel, stainless steel, GRP & aluminium
- SERVICE LOOPS including IEEE cables
- LIGHTING (Hazardous Area & Industrial) - fluorescents, floodlights, bulkheads, hi bay, roadway
- LIGHTING (Aviation & Marine)
- LIGHTING (Roadway, Public & Sports Area) - columns, pillars, towers, high masts, lanterns, cable, photo cells, cut-outs, lamps
- JUNCTION BOXES & TERMINATION / MARSHALLING BOXES
- CONTROL STATIONS
- CONVENIENCE & WELDING OUTLETS
- AUDIBLE WARNING UNITS AND BEACONS
- DISTRIBUTION PANELS - LV power, lighting & trace heating
- GROUNDING (Earthing) MATERIAL
- HEATING EQUIPMENT
- HEAT TRACE
- INSTRUMENTATION BULKS
- LV MOTOR CONTROL CENTRES
- GRP SAFETY EQUIPMENT STORAGE ENCLOSURES (fire extinguisher, life belt, etc.)
- STRUCTURAL STEEL SECTIONS AND FASTENERS
- FOR OTHER MATERIALS NOT LISTED HERE, PLEASE CONTACT US

## MacLean Electrical Company Contact Details

For further technical / commercial information pertaining to any of your cable requirements please contact the following:

MacLean Electrical  
Peterseat Park  
Peterseat Drive  
Altens  
Aberdeen AB12 3HT

Tel: +44 (0)1224 894212  
Fax: +44 (0)1224 854104  
e-mail: [maclean-aberdeen@dnw.com](mailto:maclean-aberdeen@dnw.com)  
website: [www.maclean-international.com](http://www.maclean-international.com)

Further technical data is also available on our website, and in addition our team will be able to provide you with detailed information specific to your individual enquiries.

## Fire Performance Tests

### Flame Propagation Tests

#### IEC 60332 – 1 (equiv. to BS 4066) Part 1 - Test on a single vertical insulated wire or cable

This is a relatively simple method for providing adequate indication of the flame retardant characteristics of a single cable.

A 600mm long cable sample is vertically suspended, placed in the middle of a three sided metal screen.

This is subjected to the regulated flame of one (up to a cable diameter of 50mm) or two (above 50mm diameter) gas burners at an angle of 45° to the cable. The flame is applied for a continuous time calculated according to and increasing with the cable weight (from around 1 minute for a small control cable to about 7 minutes for a 4 core 300mm<sup>2</sup> power cable. The test is passed if the cable has self-extinguished and the charred or flame affected portion of the cable has not reached the top of the sample.

#### IEC 60332 – 3 - Tests on bunched wires or cables

This test was developed to obtain a method to determine the flame propagation characteristics of bunched cables. It cannot be assumed that because a single vertical cable complies with the requirements of IEC 60332 Part 1 it will also behave in a similar manner when bunched with other cables.

The propagation of a flame along a bunch of cables depends on a number of features, such as:

- The volume of combustible material exposed to the fire
- The geometric configuration of the cables
- The temperature at which it is possible to ignite any gases emitted from the cables
- The quantity of combustible gas released from the cables
- The volume of air passing through the cable installation

The test consists of a vertical chamber, 1 x 2 x 4m. Openings for air inlet and outlet are provided in the base and the top of the test chamber for a controlled air flow rate during the test. The cable samples to be tested are 3.5m long and fixed to a steel ladder mounted 150mm from the rear wall vertically with the test chamber. The number of lengths of cables in the test depends on the test category based on the volume of combustible material.

Test Category	Volume of combustible material	Time of flame application
22	7 litres/m	40 minutes
23	3.5 litres/m	40 minutes
24	1.5 litres/m	20 minutes

A ribbon gas burner of a set size and heat flow rate, operating at 800°C is mounted horizontally in front of the cable samples at a set distance and height. The test is passed if the charred or affected portion of the samples have not reached a height exceeding 2.5m above the bottom edge of the burner.

#### IEC 60331-21:

##### Fire resisting characteristics of electric cables Circuit Integrity Test

This test determines the circuit integrity of a cable during and after a prolonged fire:

A horizontally suspended sample 1200mm long is placed 75mm above a 610mm long ribbon type gas burner, the flame temperature of which is regulated to 750°C\*. The conductors of the sample are connected to an AC voltage source, at the operating voltage, via fuses. The flame application time shall be specified in the relevant cable standard. In the absence of such a cable specification, a 90 minute flame application is recommended. The cable is regarded as having passed the test provided that during the course of the test the voltage is maintained, i.e. no fuse fails or circuit breaker is interrupted or a conductor does not rupture, i.e. the lamp is not extinguished.

#### IEC 60331-1 or 2:

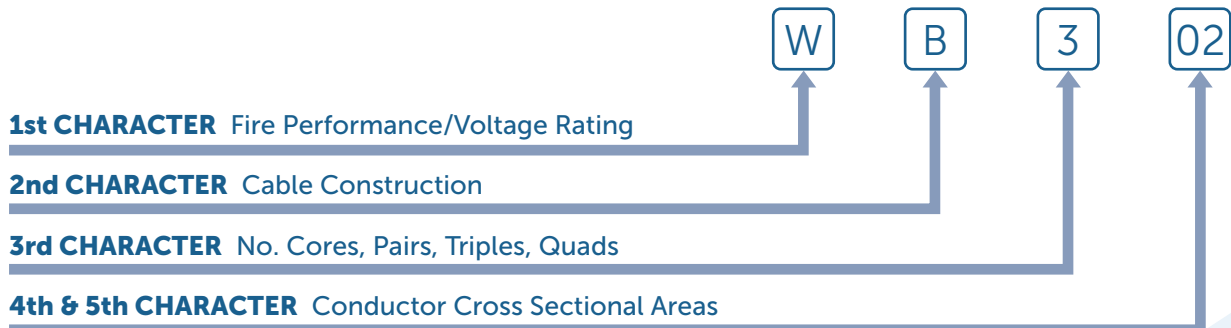
Tests for electrical cables under fire conditions – circuit integrity – Test method for fire with shock at a temperature of at least 830°C.

(Part 1 for cable with O.D. exceeding 20mm<sup>2</sup>, Part 2 for cable with O.D. not exceeding 20mm).

**\*Note:** MacLean Electrical offer many fire resistant cables that provide enhanced IEC 60331-21 performance at 950°C +/-50°C for 3 hours and to IEC 60331-1/2 830°C for 2 hours.

# UK Offshore Operators Association Limited – UKOOA

## Guidelines for Instrumentation, Power and Control cables for fixed and mobile production facilities



1st CHARACTER			
<b>F</b> Fire resistant, reduced halogen	150/250V	<b>M</b> Flame retardant, reduced halogen	3.8/6.6kV
<b>G</b> Fire resistant, LSF	150/250V	<b>N</b> Flame retardant, reduced halogen	1.9/3.3kV
<b>H</b> Flame retardant, reduced halogen	8.7/15kV	<b>P</b> Flame retardant, reduced halogen	6.35/11kV
<b>J</b> Flame retardant, reduced halogen	150/250V	<b>W</b> Flame retardant, LSF	600/1000V
<b>K</b> Flame retardant, LSF	150/250V	<b>X</b> Fire, resistant, reduced halogen	600/1000V
<b>L</b> Flame retardant, reduced halogen	600/1000V	<b>Y</b> Fire, resistant, LSF	600/1000V

2nd CHARACTER			
Basic Construction	Sheath Colour	Armour	Screen
<b>A</b> Flame Retardant	Black 0.6/1kV, Red (HV)	PBWB	see Note 3
<b>B</b> Flame Retardant	Black 0.6/1kV, Red (HV)	GSWB	see Note 3
<b>C</b> Fire Resistant	Black 0.6/1kV	PBWB	see Note 3
<b>D</b> Fire Resistant	Black 0.6/1kV	GSWB	see Note 3
<b>E</b> Flame Retardant	Green/Yellow	None	None
<b>F</b> Flame Retardant	Black	None	None
<b>G</b> Flame Retardant	Light Blue	GSWB	Coll
<b>H</b> Flame Retardant	Light Blue	GSWB	Ind
<b>J</b> Flame Retardant	Grey	GSWB	Coll
<b>K</b> Flame Retardant	Grey	GSWB	Ind
<b>L</b> Fire Resistant	Light Blue	GSWB	Coll
<b>M</b> Fire Resistant	Light Blue	GSWB	Ind
<b>N</b> Fire Resistant	Grey	GSWB	Coll
<b>P</b> Fire Resistant	Grey	GSWB	Ind
<b>Y</b> Flame Retardant	Orange	GSWB	Co-axial

3rd CHARACTER	
<b>1</b> Single Core	<b>K</b> 12 Pair
<b>2</b> 2 Core	<b>L</b> 20 Pair
<b>3</b> 3 Core	<b>M</b> 27 Pair
<b>4</b> 4 Core	<b>N</b> 37 Pair
<b>7</b> 7 Core	<b>R</b> 1 Triple
<b>A</b> 12 Core	<b>S</b> 3 Triple
<b>B</b> 19 Core	<b>T</b> 7 Triple
<b>C</b> 27 Core	<b>U</b> 12 Triple
<b>D</b> 37 Core	<b>X</b> 1 Quad
<b>F</b> 1 Pair	<b>Y</b> 3 Quad
<b>H</b> 3 Pair	<b>Z</b> 7 Quad
<b>J</b> 7 Pair	

4th & 5th CHARACTERS					
<b>00</b>	0.75	Flex (class 5) str. tinned copper cond	<b>50</b>	50.0	Stranded tinned copper cores
<b>01</b>	1.0	Flex (class 5) str. tinned copper cond	<b>70</b>	70.0	Stranded tinned copper cores
<b>02</b>	1.5	Flex str. tinned copper cond	<b>95</b>	95.0	Stranded tinned copper cores
<b>03</b>	2.5	Stranded tinned copper cores	<b>0A</b>	120.0	Stranded tinned copper cores
<b>04</b>	4.0	Stranded tinned copper cores	<b>0B</b>	150.0	Stranded tinned copper cores
<b>05</b>	4.0	Stranded tinned copper cores (special)	<b>0C</b>	185.0	Stranded tinned copper cores
<b>06</b>	6.0	Stranded tinned copper cores	<b>0D</b>	240.0	Stranded tinned copper cores
<b>10</b>	10.0	Stranded tinned copper cores	<b>0E</b>	300.0	Stranded tinned copper cores
<b>16</b>	16.0	Stranded tinned copper cores	<b>0F</b>	400.0	Stranded tinned copper cores
<b>25</b>	25.0	Stranded tinned copper cores	<b>0G</b>	500.0	Stranded tinned copper cores
<b>35</b>	35.0	Stranded tinned copper cores	<b>0H</b>	630.0	Stranded tinned copper cores

**Note 3: HV cables above 1.9/3.3kV rating have tinned copper tape and semi-conducting insulation screen**

## MacLean Electrical BS6883/7917 Cable Product Codes

1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Basic Cable Type	No. of Cores, Pairs, Triples		Conductor Size (mm)			Stranding	Core Colours		Sheath Colour	Volt Grade	Fire Resist.	Fire Resist.					

### CHARACTERS 1-3

<b>E04</b>	BS6883	EPR SW4
<b>E05</b>	BS6883	EPR SW4 GSWB SW4
<b>E06</b>	BS6883	EPR SW4 PBWB SW4
<b>E11</b>	BS7917	MT EPR SW4 GSWB SW4
<b>E34</b>	BS6883	EPR O/A SW4 GSWB SW4
<b>E35</b>	BS6883	EPR IND SW4 GSWB SW4 (0.75mm - Ind. Screen, 1.5mm - Ind. + O/A Screen)
<b>E40</b>	BS7917	MT EPR O/A SW4 GSWB SW4
<b>E41</b>	BS7917	MT EPR IND SW4 GSWB SW4 (0.75mm - Ind. Screen, 1.5mm - Ind. + O/A Screen)

### CHARACTERS 4-6

<b>4-5</b>	Number of cores, pairs, triples or quads
<b>6</b>	C = Cores • P = Pairs • T = Triples • Q = Quads

### CHARACTERS 7-9

0.75	1.0	1.5	2.5	004	006	010	016	025
035	050	070	095	120	150	185	240	300

### CHARACTERS 10

<b>A</b>	Solid Copper Conductors, Class I
<b>B</b>	Stranded Copper Conductors, Class II
<b>C</b>	Multi Stranded Copper Conductors, Class V

### CHARACTERS 11-12

<b>AA</b>	White and Numbered	Other combinations on request
<b>JJ</b>	Black, White and Numbered	
<b>QQ</b>	Black, White, Red	

### CHARACTERS 13-14

<b>BK</b>	Black	<b>GR</b>	Grey
<b>BL</b>	Blue	<b>GY</b>	Green/Yellow

### CHARACTERS 15

<b>1</b>	150/250V	<b>6</b>	3.8/6.6kV
<b>4</b>	600/1000V	<b>7</b>	6.35/11kV
<b>5</b>	1.9/3.3kV	<b>8</b>	8.7/15kV

### CHARACTERS 16

<b>A</b>	IEC60331-21
----------	-------------

### CHARACTERS 16/17

<b>B</b>	IEC60331-1/2 830°C for 2 hours and IEC60331-21 950°C +/-50°C for 3 hours for cable with Class II Conductors (750°C for cable with Class V Conductors)
----------	---

**EXAMPLE** : E1103C2.5BAABK4AB

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>E</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>C</b>	<b>2</b>	.	<b>5</b>	<b>B</b>	<b>A</b>	<b>A</b>	<b>B</b>	<b>K</b>	<b>4</b>	<b>A/B</b>	<b>B</b>

BS7917 | 3 core | 2.5mm<sup>2</sup> | Class II | MT - EPR (White & numbered cores) | SW4 | GSWB | SW4 | Black Sheath  
| 600/1000 volt | F1: Enhanced Fire Resistance 950°C +/-50°C for 3 hours | IEC60331-1/2, 830°C for 2 hours



## MacLean Electrical NEK TS 606 Cable Product Codes

1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Basic Cable Type			No. of Cores, Pairs, Triples			Conductor Size (mm)			Stranding	Core Colours			Sheath Colour	Volt Grade	Fire Resist.	Fire Resist.

### CHARACTERS 1-3

<b>N01</b>	UX	ZH SHF2
<b>N02</b>	RFOU	EPR ZH TCWB SHF2
<b>N05</b>	BFOU	MT EPR ZH TCWB SHF2
<b>N22</b>	RFOU (c)	EPR O/A ZH TCWB SHF2
<b>N23</b>	RFOU (i)	EPR IND ZH TCWB SHF2
<b>N28</b>	BFOU (c)	MT EPR O/A ZH TCWB SHF2
<b>N29</b>	BFOU (i)	MT EPR IND ZH TCWB SHF2

### CHARACTERS 4-6

<b>4-5</b>	Number of cores, pairs, triples or quads
<b>6</b>	C = Cores • P = Pairs • T = Triples • Q = Quads

### CHARACTERS 7-9

0.75	1.0	1.5	2.5	004	006	010	016	025
035	050	070	095	120	150	185	240	300

### CHARACTERS 10

<b>A</b>	Solid Copper Conductors, Class I
<b>B</b>	Stranded Copper Conductors, Class II
<b>C</b>	Multi Stranded Copper Conductors, Class V

### CHARACTERS 11-12

<b>NK</b>	NEK TS 606 core colours	Other combinations on request
-----------	-------------------------	-------------------------------

### CHARACTERS 13-14

<b>BK</b>	Black	<b>GR</b>	Grey
<b>BL</b>	Blue	<b>GY</b>	Green/Yellow

### CHARACTERS 15

<b>1</b>	150/250V	<b>6</b>	3.8/6.6kV
<b>4</b>	600/1000V	<b>7</b>	6.35/11kV
<b>5</b>	1.9/3.3kV	<b>8</b>	8.7/15kV

### CHARACTERS 16

<b>A</b>	IEC60331-21
----------	-------------

### CHARACTERS 16/17

<b>B</b>	IEC60331-1/2 830°C for 2 hours and IEC60331-21 950°C +/-50°C for 3 hours for cable with Class II Conductors (750°C for cable with Class V Conductors)
----------	---

**EXAMPLE** : N0503C2.5BNKBK4

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>N</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>C</b>	<b>2</b>	<b>.</b>	<b>5</b>	<b>B</b>	<b>N</b>	<b>K</b>	<b>B</b>	<b>K</b>	<b>4</b>	<b>A/B</b>	<b>B</b>

BFOU | 3 core | 2.5mm<sup>2</sup> | Class II | MT - EPR (Grey/Black/Red) | SHF2 | TCWB | SHF2 | Black Sheath | 600/1000 volt  
F1: Enhanced Fire Resistance 950°C +/-50°C for 3 hours | IEC60331-21 830°C for 2 hours

MacLean Electrical Type: E04  
British Specification - BS 6883  
Unarmoured Power & Control Cables  
Flame Retardant  
600/1000 Volts



2

**Construction**

- : Tinned stranded copper
- : EPR
- : SW4
- : HCL Emission < 0.5% Oxygen Index >32
- : All cores White and Numbered
- : Green/Yellow for Earth cable
- : Black for Power cable
- : 90°C
- : WE (single core green/yellow)
- : WF (multi core black)

**Application**

Cable type often referred to as 657TQ  
Multi core versions are available  
Where mechanical protection is not required  
For fixed wiring in ships and on mobile and fixed offshore units.

**Standards**

- BS6883: Design guidelines for offshore cables
- BS7655-1.2: Insulating materials
- BS7655-2.6: Sheathing materials
- IEC 60332-3-22: (Category A) flame retardance
- IEC 60754-1/2: Halogen free properties
- IEC 61034-1/2: Smoke density

## POWER & CONTROL CABLE

EPR/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WE106	WE110	WE116	WE125	WE135	WE150	WE170	WE195	WE10A	WE10B	WE10C	WE10D	WE10E
MACLEAN ELECTRICAL CABLE TYPE CODE	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04
No. & SIZE	1x6	1x10	1x16	1x25	1x35	1x50	1x70	1x95	1x120	1x150	1x185	1x240	1x300

## MECHANICAL AND ELECTRICAL DATA

		WE106	WE110	WE116	WE125	WE135	WE150	WE170	WE195	WE10A	WE10B	WE10C	WE10D	WE10E
STRANDING ARRANGEMENT	mm	7/1.04	7/1.35	7/1.70	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIAMETER OVERALL	mm	7.8	8.8	10.0	12.9	13.3	15.1	17.0	19.4	21.4	23.6	26.0	29.3	32.5
WEIGHT	kg/km	115	165	230	380	490	640	870	1150	1440	1770	2200	2780	3450
CURRENT RATING	A	48	68	93	120	145	180	232	285	332	385	445	530	610

CORE I.D. : BS6883 - SHEATH COLOUR : Green/Yellow as standard on single core cables.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.

## POWER &amp; CONTROL CABLE

EPR/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WF202	WF203	WF204	WF206	WF210	WF216	WF225	WF235	WF250	WF270	WF295	WF20A
MACLEAN ELECTRICAL CABLE TYPE CODE	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04
No. & SIZE	2x1.5	2x2.5	2x4.0	2x6.0	2x10	2x16	2x25	2x35	2x50	2x70	2x95	2x120

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	7/2.14	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6
DIAMETER OVERALL	mm	9.7	10.6	12.7	13.8	15.9	18.2	22.7	24.7	28.2	32.3	37.0	40.8
MIN. BENDING RADIUS	mm	58	64	76	83	95	109	136	148	169	194	222	245
WEIGHT	kg/km	115	150	225	290	405	580	880	1140	1560	2130	2920	3590
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	500	500
CURRENT RATING	A	23	31	43	55	77	102	130	160	195	233	277	339
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214
CAPACITANCE	μF/km	0.133	0.153	0.158	0.181	0.213	0.248	0.260	0.282	0.288	0.325	0.333	0.366
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.124	0.117	0.110	0.104	0.101	0.098	0.097	0.094	0.093	0.091
INDUCTANCE	mH/km	0.353	0.330	0.329	0.311	0.292	0.277	0.267	0.259	0.258	0.250	0.245	0.241
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.941	0.682	0.508	0.357	0.286	0.2232
V.DROP /A PER M RUN DC	mV/A/m	35	18	12	7.8	4.6	2.7	1.7	1.2	0.98	0.68	0.49	0.39
SINGLE PHASE AC	mV/A/m	35	18	12	7.8	4.6	2.7	1.7	1.2	1.0	0.70	0.53	0.43
THREE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-
GLAND SIZE		O	O	A	A	B	B	C	C	C2	D	D	D

CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER & CONTROL CABLE

EPR/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WF302	WF303	WF304	WF306	WF310	WF316	WF325	WF335	WF350	WF370	WF395	WF30A	WF30B	WF30C	WF30D	WF30E
MACLEAN ELECTRICAL CABLE TYPE CODE	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04
No. & SIZE	3x1.5	3x2.5	3x4.0	3x6.0	3x10	3x16	3x25	3x35	3x50	3x70	3x95	3x120	3x150	3x185	3x240	3x300

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	7/2.14	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIAMETER OVERALL	mm	10.3	11.2	13.4	14.7	16.9	19.4	24.4	26.5	30.4	34.7	39.8	43.9	48.5	54.0	61.0	67.8
MIN. BENDING RADIUS	mm	62	67	80	88	101	116	146	159	182	208	239	263	291	324	366	407
WEIGHT	kg/km	140	180	270	360	495	740	1140	1480	2020	2780	3810	4700	5700	7170	9300	11175
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	750	750	750	750	750	500	350	300
CURRENT RATING	A	20	29	37	48	65	87	110	136	167	215	258	300	350	395	467	553
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35	44
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.076	0.0607
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108	0.087
CAPACITANCE	μF/km	0.133	0.153	0.158	0.181	0.213	0.248	0.260	0.282	0.288	0.325	0.333	0.366	0.369	0.374	0.381	0.392
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.124	0.117	0.110	0.104	0.101	0.098	0.097	0.094	0.093	0.091	0.091	0.091	0.090	0.090
INDUCTANCE	mH/km	0.353	0.330	0.329	0.311	0.292	0.277	0.267	0.259	0.258	0.250	0.245	0.241	0.240	0.241	0.238	0.238
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.941	0.682	0.508	0.357	0.286	0.232	0.197	0.167	0.140	0.125
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	10	6.7	4.0	2.3	1.5	1.1	0.89	0.64	0.50	0.44	0.38	0.34	0.31	0.29
GLAND SIZE		O	O	A	B	B	B	C	C2	C2	D	D	E	E	E	F	F

CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER &amp; CONTROL CABLE

EPR/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WF402	WF403	WF404	WF406	WF410	WF416	WF425	WF435	WF450	WF470	WF495	WF40A	WF40B	WF40C	WF40D
MACLEAN ELECTRICAL CABLE TYPE CODE	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04
No. & SIZE	4x1.5	4x2.5	4x4.0	4x6.0	4x10	4x16	4x25	4x35	4x50	4x70	4x95	4x120	4x150	4x185	4x240

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	7/2.14	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2
DIAMETER OVERALL	mm	11.2	12.2	14.7	16.3	18.7	21.7	27.0	29.4	33.7	38.5	44.3	48.9	54.1	60.1	68.1
MIN. BENDING RADIUS	mm	67	73	88	98	112	130	162	176	202	231	266	293	325	361	409
WEIGHT	kg/km	165	215	330	455	630	950	1540	1910	2590	3560	4890	6060	7350	9250	12020
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	750	750	750	750	500	500	350
CURRENT RATING	A	20	29	37	48	68	87	110	136	167	215	258	300	350	395	467
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108
CAPACITANCE	μF/km	0.133	0.153	0.158	0.181	0.213	0.248	0.260	0.282	0.288	0.325	0.333	0.366	0.369	0.374	0.381
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.124	0.117	0.110	0.104	0.101	0.098	0.097	0.094	0.093	0.091	0.091	0.091	0.090
INDUCTANCE	mH/km	0.353	0.330	0.329	0.311	0.292	0.277	0.267	0.259	0.258	0.250	0.245	0.241	0.240	0.241	0.238
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.941	0.682	0.508	0.357	0.286	0.232	0.197	0.167	0.140
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	10	6.7	4.0	2.3	1.5	1.1	0.89	0.64	0.50	0.44	0.38	0.34	0.31
GLAND SIZE		O	A	B	B	B	C	C2	C2	D	D	E	E	E	F	G

CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER & CONTROL CABLE

EPR/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WF502	WF503	WF702	WF703	WFA02	WFA03	WFB02	WFB03	WFC02	WFC03	WFD02	WFD03
MACLEAN ELECTRICAL CABLE TYPE CODE	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04	E04
No. & SIZE	5x1.5	5x2.5	7x1.5	7x2.5	12x1.5	12x2.5	19x1.5	19x2.5	27x1.5	27x2.5	37x1.5	37x2.5

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
DIAMETER OVERALL	mm	12.1	13.5	13.4	14.6	17.5	19.5	20.8	23.1	25.1	27.8	27.1	31.4
MIN. BENDING RADIUS	mm	73	81	80	88	105	117	125	139	151	167	163	188
WEIGHT	kg/km	190	260	245	325	395	540	590	820	840	1150	1100	1520
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500
CURRENT RATING	A	12	17	11	15	9	12	8	11	7	9	6	9
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35
COND. DC RES AT 20°C	Ω/km	12.2	7.56	12.2	7.56	12.2	7.56	12.2	7.56	12.2	7.56	12.2	7.56
COND. AC RES AT 90°C	Ω/km	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639
CAPACITANCE	μF/km	0.133	0.153	0.133	0.153	0.133	0.153	0.133	0.153	0.133	0.153	0.133	0.153
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.133	0.124	0.133	0.124	0.133	0.124	0.133	0.124	0.133	0.124
INDUCTANCE	mH/km	0.353	0.330	0.353	0.330	0.353	0.330	0.353	0.330	0.353	0.330	0.353	0.330
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	15.556	9.640	15.556	9.640	15.556	9.640	15.556	9.640	15.556	9.640
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	30	16	30	16	30	16	30	16	30	16
GLAND SIZE		A	A	A	B	B	B	C	C	C	C2	C2	C2

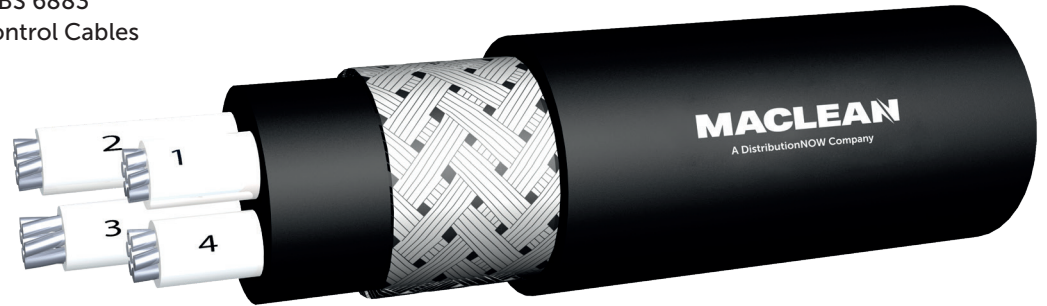
CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

MacLean Electrical Type: E05 - multi core  
 MacLean Electrical Type: E06 - single core  
 British Specification - BS 6883  
 Armoured Power & Control Cables  
 Flame Retardant  
 600/1000 Volts



**Construction**

<b>Conductor:</b>	Tinned stranded copper
<b>Insulation:</b>	EPR
<b>Inner Sheath:</b>	SW4
<b>Armour:</b>	Galvanised Steel Wire Braid for Multi Core (Phosphor Bronze Wire Braid for Single Core)
<b>Outer Sheath:</b>	SW4 HCL Emission <0.5% Oxygen Index >32
<b>Core Identification:</b>	All cores White and Numbered
<b>Outer Sheath Colours:</b>	Black
<b>Maximum Conductor Operating Temperature:</b>	90°C
<b>UKOOA Reference:</b>	WB (multi core) WA (single core)

**Application**

Cable type often referred to as 658TQ (multi core) 6591TQ (single core)  
 Armoured cables for fixed wiring in ships and on mobile and fixed offshore units.

**Standards**

<b>BS6883:</b>	Design guidelines for offshore cables
<b>BS7655-1.2:</b>	Insulating materials
<b>BS7655-2.6:</b>	Sheathing materials
<b>IEC 60332-3-22:</b>	(Category A) flame retardance
<b>IEC 60754-1/2:</b>	Halogen free properties
<b>IEC 61034-1/2:</b>	Smoke density



## POWER & CONTROL CABLE

EPR/SW4/PBWB/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WA106	WA110	WA116	WA125	WA135	WA150	WA170	WA195	WA10A	WA10B	WA10C	WA10D	WA10E	WA10F	WA10G	WA10H
MACLEAN ELECTRICAL CABLE TYPE CODE	E06	E06	E06	E06	E06	E06	E06	E06	E06	E06	E06	E06	E06	E06	E06	E06
No. & SIZE	1x6	1x10	1x16	1x25	1x35	1x50	1x70	1x95	1x120	1x150	1x185	1x240	1x300	1x400	1x500	1x630

### MECHANICAL AND ELECTRICAL DATA

TYPICAL STRANDING ARRANGEMENT	7/1.04	7/1.35	7/1.70	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52	91/2.36	91/2.65	127/2.52	
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4	2.6	2.8	2.8
DIA. OVER BEDDING	mm	7.8	8.8	10.0	12.4	13.3	15.1	17.0	19.4	21.4	23.6	26.0	29.3	32.5	36.4	40.4	44.3
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	11.8	13.0	14.2	16.8	17.9	19.7	21.9	24.5	26.6	29.0	32.6	36.0	39.2	43.7	48.1	52.3
MIN. BENDING RADIUS	mm	71	78	85	101	107	119	131	147	159	174	196	216	235	262	289	314
WEIGHT	kg/km	340	390	480	565	740	940	1270	1500	1750	2200	2700	3400	4200	5700	7200	8840
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	1000	750	750	750	750	750	500	500
CURRENT RATING	A	48	68	93	120	145	180	232	285	332	385	445	530	610	716	823	947
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.85	1.4	2.3	3.6	5.0	7.2	9.8	13	17	21	26	35	44	57	72	91
COND. DC RES AT 20°C	Ω/km	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762	0.0607	0.0475	0.0369	0.0286
COND. AC RES AT 90°C	Ω/km	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108	0.087	0.069	0.058	0.045
CAPACITANCE	μF/km	0.311	0.379	0.447	0.464	0.514	0.522	0.609	0.628	0.694	0.694	0.705	0.727	0.750	0.793	0.821	0.904
REACTANCE AT 60Hz	Ω/km	0.175	0.163	0.153	0.143	0.139	0.135	0.128	0.124	0.121	0.120	0.120	0.117	0.115	0.113	0.112	0.109
INDUCTANCE	mH/km	0.464	0.433	0.405	0.379	0.368	0.357	0.341	0.330	0.321	0.318	0.319	0.310	0.306	0.301	0.296	0.289
IMP. AT 90°C and 60Hz	Ω/km	3.969	2.352	1.487	0.947	0.689	0.516	0.367	0.298	0.246	0.212	0.184	0.159	0.145	0.133	0.126	0.118
V.DROP /A PER M RUN DC	mV/A/m	7.6	4.5	2.7	1.7	1.2	0.96	0.67	0.48	0.38	0.31	0.25	0.19	0.15	0.12	0.093	0.071
SINGLE PHASE AC	mV/A/m	7.6	4.5	2.7	1.7	1.2	0.98	0.69	0.52	0.42	0.36	0.32	0.27	0.24	0.23	0.22	0.21
THREE PHASE AC	mV/A/m	6.6	3.9	2.3	1.5	1.1	0.87	0.63	0.49	0.43	0.38	0.34	0.31	0.29	0.28	0.27	0.26
GLAND SIZE		O	O	O	A	A	B	B	B	C	C	C2	C2	C2	D	D	E

CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER &amp; CONTROL CABLE

EPR/SW4/GSWB/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WB202	WB203	WB204	WB206	WB210	WB216	WB225	WB235	WB250	WB270	WB295	WB20A	WB20B	WB20C	WB20D	WB20E
MACLEAN ELECTRICAL CABLE TYPE CODE	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05
No. & SIZE	2x1.5	2x2.5	2x4.0	2x6.0	2x10	2x16	2x25	2x35	2x50	2x70	2x95	2x120	2x150	2x185	2x240	2x300

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIA. OVER INNER SHEATH	mm	9.7	10.6	12.7	13.8	15.9	18.2	22.7	24.7	28.2	32.3	37.0	40.8	45.0	50.0	56.7	63.0
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	13.9	14.7	17.1	18.3	20.7	23.2	27.9	30.1	34.9	39.2	44.5	48.6	53.1	58.2	65.9	72.5
MIN. BENDING RADIUS	mm	83	88	103	110	124	139	167	181	209	235	267	292	319	349	395	435
WEIGHT	kg/km	270	310	430	520	680	850	1500	1810	2510	3230	4220	5125	6210	7500	9440	11500
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500	500	500
CURRENT RATING	A	23	31	43	55	77	102	130	160	195	233	277	339	412	472	558	645
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35	44
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762	0.0607
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108	0.087
CAPACITANCE	μF/km	0.133	0.153	0.158	0.181	0.213	0.248	0.260	0.282	0.288	0.325	0.333	0.366	0.369	0.374	0.381	0.392
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.124	0.117	0.110	0.104	0.101	0.098	0.097	0.094	0.093	0.091	0.091	0.091	0.090	0.090
INDUCTANCE	mH/km	0.353	0.330	0.329	0.311	0.292	0.277	0.267	0.259	0.258	0.250	0.245	0.241	0.240	0.241	0.238	0.238
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.941	0.682	0.508	0.357	0.286	0.232	0.197	0.167	0.140	0.125
V.DROP /A PER M RUN DC	mV/A/m	35	18	12	7.8	4.6	2.7	1.7	1.2	0.98	0.68	0.49	0.39	0.31	0.25	0.19	0.15
SINGLE PHASE AC	mV/A/m	35	18	12	7.8	4.6	2.7	1.7	1.2	1.0	0.70	0.53	0.43	0.36	0.32	0.27	0.24
THREE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GLAND SIZE		O	O	A	A	B	B	C	C	C	C2	C2	D	E	E	F	F

CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER & CONTROL CABLE

EPR/SW4/GSWB/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WB302	WB303	WB304	WB306	WB310	WB316	WB325	WB335	WB350	WB370	WB395	WB30A	WB30B	WB30C	WB30D	WB30E
MACLEAN ELECTRICAL CABLE TYPE CODE	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05
No. & SIZE	3x1.5	3x2.5	3x4.0	3x6.0	3x10	3x16	3x25	3x35	3x50	3x70	3x95	3x120	3x150	3x185	3x240	3x300

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIA. OVER INNER SHEATH	mm	10.3	11.2	13.4	14.7	16.9	19.4	24.4	26.5	30.4	34.7	39.8	43.9	48.5	54.0	61.0	67.8
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	14.4	15.6	17.8	19.3	21.9	24.5	29.8	33.1	37.0	41.9	47.4	52.0	57.0	62.9	65.2	77.7
MIN. BENDING RADIUS	mm	86	94	107	116	131	147	179	199	222	251	284	312	342	377	391	466
WEIGHT	kg/km	290	390	520	620	850	1150	1600	2200	3000	3980	5295	6490	7690	9550	12400	14900
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	750	750	750	750	750	500	350	300
CURRENT RATING	A	20	29	37	48	65	87	110	136	167	215	258	300	350	395	467	553
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35	44
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.076	0.0607
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108	0.087
CAPACITANCE	μF/km	0.133	0.153	0.158	0.181	0.213	0.248	0.260	0.282	0.288	0.325	0.333	0.366	0.369	0.374	0.381	0.392
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.124	0.117	0.110	0.104	0.101	0.098	0.097	0.094	0.093	0.091	0.091	0.091	0.090	0.090
INDUCTANCE	mH/km	0.353	0.330	0.329	0.311	0.292	0.277	0.267	0.259	0.258	0.250	0.245	0.241	0.240	0.241	0.238	0.238
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.941	0.682	0.508	0.357	0.286	0.232	0.197	0.167	0.140	0.125
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	10	6.7	4.0	2.3	1.5	1.1	0.89	0.64	0.50	0.44	0.38	0.34	0.31	0.29
GLAND SIZE		O	O	A	B	B	B	C	C	C2	D	D	D	E	E	F	F

CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER &amp; CONTROL CABLE

EPR/SW4/GSWB/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WB402	WB403	WB404	WB406	WB410	WB416	WB425	WB435	WB450	WB470	WB495	WB40A	WB40B	WB40C	WB40D
MACLEAN ELECTRICAL CABLE TYPE CODE	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05
No. & SIZE	4x1.5	4x2.5	4x4.0	4x6.0	4x10	4x16	4x25	4x35	4x50	4x70	4x95	4x120	4x150	4x185	4x240

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2
DIA. OVER INNER SHEATH	mm	11.2	12.2	14.7	16.3	18.7	21.7	27.0	29.4	33.7	38.5	44.3	48.9	54.1	60.1	68.1
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	15.6	16.6	19.3	21.3	23.9	26.9	33.6	36.1	40.9	46.1	52.3	57.4	63.1	69.4	78.1
MIN. BENDING RADIUS	mm	94	99	116	127	143	161	202	217	245	277	314	344	379	416	469
WEIGHT	kg/km	360	470	620	760	1100	1500	2100	2700	3400	4600	5700	6900	8200	10260	13200
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	750	750	750	750	500	500	350
CURRENT RATING	A	20	29	37	48	65	87	110	136	167	215	258	300	350	395	467
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108
CAPACITANCE	μF/km	0.133	0.153	0.158	0.181	0.213	0.248	0.260	0.282	0.288	0.325	0.333	0.366	0.369	0.374	0.381
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.124	0.117	0.110	0.104	0.101	0.098	0.097	0.094	0.093	0.091	0.091	0.091	0.090
INDUCTANCE	mH/km	0.353	0.330	0.329	0.311	0.292	0.277	0.267	0.259	0.258	0.250	0.245	0.241	0.240	0.241	0.238
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.941	0.682	0.508	0.357	0.286	0.232	0.197	0.167	0.140
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	10	6.7	4.0	2.3	1.5	1.1	0.89	0.64	0.50	0.44	0.38	0.34	0.31
GLAND SIZE		O	A	B	B	B	C	C2	C2	C2	D	E	E	E	F	A.O.A.

CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER & CONTROL CABLE

EPR/SW4/GSWB/SW4 600/1000V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	WB502	WB503	WB702	WB703	WBA02	WBA03	WBB02	WBB03	WBC02	WBC03	WBD02	WBD03
MACLEAN ELECTRICAL CABLE TYPE CODE	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05	E05
No. & SIZE	5x1.5	5x2.5	7x1.5	7x2.5	12x1.5	12x2.5	19x1.5	19x2.5	27x1.5	27x2.5	37x1.5	37x2.5

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
DIA. OVER INNER SHEATH	mm	12.1	13.5	13.4	14.6	17.5	19.5	20.8	23.1	25.1	27.8	27.1	31.4
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45
DIAMETER OVERALL	mm	16.5	17.8	17.8	19.2	22.5	24.6	25.8	28.3	30.7	34.4	34.5	38.0
MIN. BENDING RADIUS	mm	99	107	107	115	135	148	155	170	184	206	215	228
WEIGHT	kg/km	420	550	520	600	850	875	1100	1210	1500	1800	2700	2950
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500
CURRENT RATING	A	12	17	11	15	9	12	8	11	7	9	6	9
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35
COND. DC RES AT 20°C	Ω/km	12.2	7.56	12.2	7.56	12.2	7.56	12.2	7.56	12.2	7.56	12.2	7.56
COND. AC RES AT 90°C	Ω/km	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639
CAPACITANCE	μF/km	0.133	0.153	0.133	0.153	0.133	0.153	0.133	0.153	0.133	0.153	0.133	0.153
REACTANCE AT 60Hz	Ω/km	0.133	0.124	0.133	0.124	0.133	0.124	0.133	0.124	0.133	0.124	0.133	0.124
INDUCTANCE	mH/km	0.353	0.330	0.353	0.330	0.353	0.330	0.353	0.330	0.353	0.330	0.353	0.330
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	15.556	9.640	15.556	9.640	15.556	9.640	15.556	9.640	15.556	9.640
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	30	16	30	16	30	16	30	16	30	16
GLAND SIZE		A	A	A	B	B	B	C	C	C	C2	C2	C2

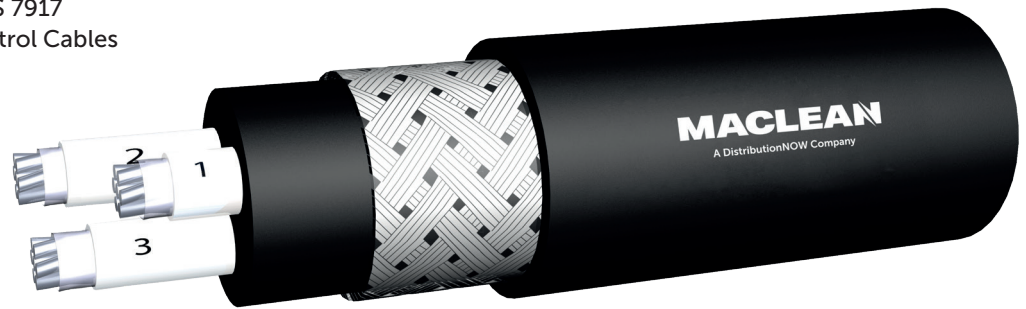
CORE I.D. : BS6883 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order..

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

MacLean Electrical Type: E11 - multi core  
 MacLean Electrical Type: E12 - single core  
 British Specification - BS 7917  
 Armoured Power & Control Cables  
 Fire Resistant  
 600/1000 Volts



2

### Construction

Conductor:	Tinned stranded copper
Insulation:	Mica glass tape, extruded EPR
Inner Sheath:	SW4
Armour:	Galvanised Steel Wire Braid for Multi Core (Phosphor Bronze Wire Braid for Single Core)
Outer Sheath:	SW4 HCL Emission <0.5% Oxygen Index >32
Core Identification:	All cores White and Numbered
Outer Sheath Colours:	Black
Maximum Conductor Operating Temperature:	90°C
UKOOA Reference:	YD (multi core) YC (single core)

### Application

For fixed wiring applications in ships and offshore units where circuit integrity is essential under fire conditions.

### Standards

BS7917:	Design guidelines for offshore fire resistant cables
BS7655-1.2:	Insulating materials
BS7655-2.6:	Sheathing materials
IEC 60331-21:	Fire resistance
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density

**\*Note:** MacLean Electrical offer many fire resistant cables that provide enhanced IEC 60331-21 performance at 950°C +/-50°C for 3 hours and to IEC 60331-1/2, 830°C for 2 hours

## POWER & CONTROL CABLE

MT/EPR/SW4/PBWB/SW4 600/1000V FIRE RESISTANT TO IEC 60331-21; FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	YC106	YC110	YC116	YC125	YC135	YC150	YC170	YC195	YC10A	YC10B	YC10C	YC10D	YC10E	YC10F	YC10G	YC10H
MACLEAN ELECTRICAL CABLE TYPE CODE	E12	E12	E12	E12	E12	E12	E12	E12	E12	E12	E12	E12	E12	E12	E12	E12
No. & SIZE	1x6.0	1x10	1x16	1x25	1x35	1x50	1x70	1x95	1x120	1x150	1x185	1x240	1x300	1x400	1x500	1x630

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/1.04	7/1.35	7/1.70	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52	91/2.36	91/2.65	127/2.52
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4	2.6	2.8	2.8
DIA. OVER INNER SHEATH	mm	7.8	8.8	10.0	12.4	13.3	19.4	17.0	19.4	21.4	23.6	26.0	29.3	32.5	36.4	40.4	44.3
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	11.8	13.0	14.2	16.8	17.9	24.5	21.9	24.5	26.6	29.0	32.6	36.0	39.2	43.7	48.1	52.3
MIN. BENDING RADIUS	mm	71	78	85	101	107	119	131	147	159	174	196	216	235	262	289	314
WEIGHT	kg/km	340	390	480	565	740	1150	1270	1500	1750	2200	2700	3400	4200	5700	7200	8840
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	1000	750	750	750	750	750	500	500
CURRENT RATING	A	48	68	93	120	145	180	232	285	332	385	445	530	610	716	823	947
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35	44	57	72	91
COND. DC RES AT 20°C	Ω/km	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762	0.0607	0.0475	0.0369	0.0286
COND. AC RES AT 90°C	Ω/km	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108	0.087	0.069	0.058	0.045
CAPACITANCE	μF/km	0.267	0.305	0.347	0.388	0.413	0.444	0.493	0.518	0.560	0.587	0.605	0.658	0.683	0.793	0.821	0.904
REACTANCE AT 60Hz	Ω/km	0.179	0.170	0.159	0.147	0.143	0.138	0.133	0.128	0.125	0.122	0.120	0.118	0.116	0.113	0.112	0.109
INDUCTANCE	mH/km	0.476	0.450	0.422	0.389	0.379	0.369	0.352	0.339	0.330	0.325	0.323	0.314	0.309	0.301	0.296	0.289
IMP. AT 90°C and 60Hz	Ω/km	3.969	2.352	1.488	0.947	0.689	0.517	0.369	0.299	0.247	0.213	0.186	0.160	0.145	0.133	0.126	0.118
V.DROP /A PER M RUN DC	mV/A/m	7.6	4.5	2.7	1.7	1.2	0.96	0.67	0.48	0.38	0.31	0.25	0.19	0.15	0.12	0.093	0.071
SINGLE PHASE AC	mV/A/m	7.6	4.5	2.7	1.7	1.2	0.98	0.69	0.52	0.42	0.36	0.32	0.27	0.24	0.23	0.22	0.21
THREE PHASE AC	mV/A/m	6.6	3.9	2.3	1.5	1.1	0.87	0.63	0.49	0.43	0.38	0.34	0.31	0.29	0.28	0.27	0.26
GLAND SIZE	O	O	O	A	A	B	B	B	C	C	C2	C2	C2	D	D	E	

CORE I.D. : BS7917 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.  
The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER &amp; CONTROL CABLE

MT/EPR/SW4/GSWB/SW4 600/1000V FIRE RESISTANT TO IEC 60331-21; FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	YD202	YD203	YD204	YD206	YD210	YD216	YD225	YD235	YD250	YD270	YD295	YD20A	YD20B	YD20C	YD20D	YD20E
MACLEAN ELECTRICAL CABLE TYPE CODE	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11
No. & SIZE	2x1.5	2x2.5	2x4.0	2x6.0	2x10	2x16	2x25	2x35	2x50	2x70	2x95	2x120	2x150	2x185	2x240	2x300

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIA. OVER INNER SHEATH	mm	10.7	11.6	13.7	14.8	16.9	19.2	23.7	25.7	29.2	33.3	38.0	41.8	46.0	51.0	57.7	64.0
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	14.9	15.7	18.1	19.3	21.7	24.2	28.9	31.1	35.9	40.2	45.5	49.6	54.1	59.2	66.9	73.5
MIN. BENDING RADIUS	mm	89	94	109	116	130	145	173	187	215	241	273	298	325	355	401	441
WEIGHT	kg/km	270	310	430	520	680	850	1500	1810	2510	3230	4220	5125	6210	7500	9440	11500
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500	500	500
CURRENT RATING	A	23	31	43	55	77	102	130	160	195	233	277	339	412	472	558	645
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35	44
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762	0.0607
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108	0.087
CAPACITANCE	μF/km	0.112	0.126	0.140	0.157	0.180	0.201	0.223	0.232	0.248	0.274	0.286	0.303	0.315	0.323	0.348	0.357
REACTANCE AT 60Hz	Ω/km	0.148	0.140	0.133	0.125	0.119	0.114	0.107	0.105	0.103	0.100	0.098	0.096	0.094	0.094	0.092	0.092
INDUCTANCE	mH/km	0.391	0.371	0.353	0.332	0.316	0.304	0.283	0.278	0.272	0.264	0.259	0.254	0.251	0.250	0.244	0.243
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.942	0.683	0.509	0.358	0.288	0.234	0.199	0.169	0.142	0.126
V.DROP /A PER M RUN DC	mV/A/m	35	18	12	7.8	4.6	2.7	1.7	1.2	0.98	0.68	0.49	0.39	0.31	0.25	0.19	0.15
SINGLE PHASE AC	mV/A/m	35	18	12	7.8	4.6	2.7	1.7	1.2	1.0	0.7	0.53	0.43	0.36	0.32	0.27	0.24
THREE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GLAND SIZE		O	O	A	B	B	B	C	C	C2	C2	D	D	E	E	F	F

CORE I.D. : BS7917 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.



## POWER & CONTROL CABLE

MT/EPR/SW4/GSWB/SW4 600/1000V FIRE RESISTANT TO IEC 60331-21; FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	YD302	YD303	YD304	YD306	YD310	YD316	YD325	YD335	YD350	YD370	YD395	YD30A	YD30B	YD30C	YD30D	YD30E
MACLEAN ELECTRICAL CABLE TYPE CODE	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11
No. & SIZE	3x1.5	3x2.5	3x4.0	3x6.0	3x10	3x16	3x25	3x35	3x50	3x70	3x95	3x120	3x150	3x185	3x240	3x300

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25	61/2.52
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIA. OVER INNER SHEATH	mm	11.8	12.7	14.9	16.2	18.4	20.9	25.9	28.0	31.9	36.2	41.3	45.4	50.0	55.5	62.5	69.3
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	15.9	17.1	19.3	20.8	23.4	26.0	31.3	34.6	38.5	43.4	48.9	53.5	58.5	64.4	66.7	79.2
MIN. BENDING RADIUS	mm	95	103	116	125	140	156	188	208	231	260	293	321	351	386	400	475
WEIGHT	kg/km	290	390	520	620	850	1150	1600	2200	3000	3980	5295	6490	7690	9550	12400	14900
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	750	500	500	500	350	350	350	300
CURRENT RATING	A	20	29	37	48	65	87	110	136	167	215	258	300	350	395	467	553
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35	44
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.7	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762	0.0607
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108	0.087
CAPACITANCE	μF/km	0.112	0.126	0.140	0.157	0.180	0.201	0.223	0.232	0.248	0.274	0.286	0.303	0.315	0.323	0.348	0.357
REACTANCE AT 60Hz	Ω/km	0.148	0.140	0.133	0.125	0.119	0.114	0.107	0.105	0.103	0.100	0.098	0.096	0.094	0.094	0.092	0.092
INDUCTANCE	mH/km	0.391	0.371	0.353	0.332	0.316	0.304	0.283	0.278	0.272	0.264	0.259	0.254	0.251	0.250	0.244	0.243
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.942	0.683	0.509	0.358	0.288	0.234	0.199	0.169	0.142	0.126
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	10	6.7	6.7	2.3	1.5	1.1	0.89	0.64	0.50	0.44	0.38	0.34	0.31	0.29
GLAND SIZE		O	A	A	B	B	C	C	C2	C2	D	D	E	E	E	F	A.O.A.

CORE I.D. : BS7917 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER &amp; CONTROL CABLE

MT/EPR/SW4/GSWB/SW4 600/1000V FIRE RESISTANT TO IEC 60331-21; FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	YD402	YD403	YD404	YD406	YD410	YD416	YD425	YD435	YD450	YD470	YD495	YD40A	YD40B	YD40C	YD40D
MACLEAN ELECTRICAL CABLE TYPE CODE	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11
No. & SIZE	4x1.5	4x2.5	4x4.0	4x6.0	4x10	4x16	4x25	4x35	4x50	4x70	4x95	4x120	4x150	4x185	4x240

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.85	7/1.04	7/1.35	7/1.7	19/1.35	19/1.53	19/1.78	19/2.14	37/1.78	37/2.03	37/2.25	37/2.52	61/2.25
INSULATION THICKNESS	mm	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2
DIA. OVER INNER SHEATH	mm	13.1	14.1	16.6	18.2	20.7	23.5	29.4	32.1	37.2	42.4	48.2	50.9	56.1	62.1	70.1
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
DIAMETER OVERALL	mm	16.3	17.3	20.0	21.8	24.5	27.5	34.1	37	42.5	48.1	54.3	59.4	65.1	71.4	80.1
MIN. BENDING RADIUS	mm	106	112	128	140	155	173	214	229	257	289	326	356	391	428	480
WEIGHT	kg/km	360	470	620	760	1100	1500	2100	2700	3400	4600	5700	6900	8200	10260	13200
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	1000	1000	750	750	750	750	500	500	350
CURRENT RATING	A	20	29	37	48	65	87	110	136	167	215	258	300	350	395	467
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.57	0.85	1.4	2.3	3.9	5.0	6.8	9.8	13	17	21	26	35
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762
COND. AC RES AT 90°C	Ω/km	15.555	9.639	5.993	3.965	2.346	1.479	0.936	0.674	0.499	0.344	0.271	0.214	0.175	0.140	0.108
CAPACITANCE	μF/km	0.112	0.126	0.140	0.157	0.180	0.201	0.223	0.232	0.248	0.274	0.286	0.303	0.315	0.323	0.348
REACTANCE AT 60Hz	Ω/km	0.148	0.140	0.133	0.125	0.119	0.114	0.107	0.105	0.103	0.100	0.098	0.096	0.094	0.094	0.092
INDUCTANCE	mH/km	0.391	0.371	0.353	0.332	0.316	0.304	0.283	0.278	0.272	0.264	0.259	0.254	0.251	0.250	0.244
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	5.994	3.967	2.349	1.483	0.942	0.683	0.509	0.358	0.288	0.234	0.199	0.169	0.142
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	10	6.7	4.0	2.3	1.5	1.1	0.89	0.64	0.50	0.44	0.38	0.34	0.31
GLAND SIZE		A	A	B	B	B	C	C2	C2	D	D	E	E	F	F	A.O.A.

CORE I.D. : BS7917 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.

## POWER & CONTROL CABLE

MT/EPR/SW4/GSWB/SW4 600/1000V FIRE RESISTANT TO IEC 60331-21; FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE	YD502	YD503	YD702	YD703	YDA02	YDA03	YDB02	YDB03	YDC02	YDC03	YDD02	YDD03
MACLEAN ELECTRICAL CABLE TYPE CODE	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11	E11
No. & SIZE	5x1.5	5x2.5	7x1.5	7x2.5	12x1.5	12x2.5	19x1.5	19x2.5	27x1.5	27x2.5	37x1.5	37x2.5

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67	7/0.53	7/0.67
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
DIA. OVER INNER SHEATH	mm	14.1	15.4	14.7	16.9	19.6	21.8	24.3	26.8	29	32	32	35.9
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45
DIAMETER OVERALL	mm	17.3	18.6	18.4	20.3	23.2	25.6	28.1	30.8	33.2	36.7	36.7	40.8
MIN. BENDING RADIUS	mm	114	122	128	136	171	184	209	224	250	272	299	330
WEIGHT	kg/km	420	550	520	600	850	950	1100	1400	1500	1800	2700	2950
NOMINAL DRUM LENGTH	m	1000	1000	1000	1000	1000	1000	500	500	500	500	500	500
CURRENT RATING	A	12	17	11	15	9	12	8	11	7	9	6	9
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35	0.22	0.35
COND. DC RES AT 20°C	Ω/km	12.2	7.56	12.2	7.56	12.2	7.56	12.2	7.56	12.20	7.56	12.2	7.56
COND. AC RES AT 90°C	Ω/km	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639	15.555	9.639
CAPACITANCE	μF/km	0.112	0.126	0.112	0.126	0.112	0.126	0.112	0.126	0.112	0.126	0.112	0.126
REACTANCE AT 60Hz	Ω/km	0.148	0.140	0.148	0.140	0.148	0.140	0.148	0.140	0.148	0.140	0.148	0.140
INDUCTANCE	mH/km	0.391	0.371	0.391	0.371	0.391	0.371	0.391	0.371	0.391	0.371	0.391	0.371
IMP. AT 90°C and 60Hz	Ω/km	15.556	9.640	15.556	9.640	15.536	9.640	15.556	9.640	15.556	9.640	15.556	9.640
V.DROP /A PER M RUN DC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-
SINGLE PHASE AC	mV/A/m	-	-	-	-	-	-	-	-	-	-	-	-
THREE PHASE AC	mV/A/m	30	16	30	16	30	16	30	16	30	16	30	16
GLAND SIZE		A	A	B	B	B	C	C	C2	C2	C2	C2	C2

CORE I.D. : BS7917 - SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.

MacLean Electrical Type: E34  
 British Specification - BS 6883  
 Armoured Instrumentation Cables  
 Collectively Screened  
 Flame Retardant  
 150/250 Volts



2

## Construction

Conductor:	Tinned stranded copper
Insulation:	EPR
Screening:	Collective screen, aluminium polyester tape with tinned stranded copper drain wire
Inner Sheath:	SW4
Armour:	Galvanised steel wire braid
Outer Sheath:	SW4 HCL Emission <0.5% Oxygen Index >32
Core Identification:	Pairs - Black, White Triples - Black, White, Red Quads - Black, White, Red, Blue (Pairs, Triples and Quads are identified by printed numbers or tapes)
Outer Sheath Colours:	Blue, Grey or Black
Maximum Conductor Operating Temperature:	90°C
UKOOA Reference:	KG (Blue) KJ (Grey)

## Application

Armoured cables for fixed wiring in ships and on mobile and fixed offshore units.

## Standards

BS6883:	Design guidelines for offshore cables
BS7655-1.2:	Insulating materials
BS7655-2.6:	Sheathing materials
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density

## INSTRUMENTATION CABLES

EPR/COLL/SW4/GSWB/SW4 150/250V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE, GREY	KKF00	KKX00	KJH00	-	KJJ00	-	KJK00	KJL00	KKR00	KJS00	KJT00	KJU00	KKF01	KKR01	KKX01
UKOOA CODE, BLUE	KHF00	KHX00	KGH00	-	KGJ00	-	KGK00	KGL00	KHR00	KGS00	KGT00	KGU00	KHF01	KHR01	KHX01
MACLEAN ELECTRICAL CABLE TYPE CODE	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34
CONFIGURATION	1x2x.75 ind. Screen	1x4x.75 ind. Screen	3x2x.75	5x2x.75	7x2x.75	10x2x.75	12x2x.75	20x2x.75	1x3x.75 ind. Screen	3x3x.75	7x3x.75	12x3x.75	1x2x1.0 ind. Screen	1x3x1.0 ind. Screen	1x4x1.0 ind. Screen

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	32/0.20	32/0.20	32/0.20
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.2	1.2	1.2	1.5	1.4	1.4	1.6	1.8	1.0	1.3	1.5	1.7	1.0	1.1	1.1
DIA. OVER INNER SHEATH	mm	8.6	12.6	13.3	16.0	17.5	21.9	22.7	27.0	8.9	15.2	20.2	27.1	9.2	9.7	11
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.3	0.3	0.3	0.45	0.3	0.3	0.3
RAD. SHEATH THICKNESS	mm	1.25	1.4	1.4	1.4	1.7	1.7	1.7	2.0	1.25	1.2	1.4	1.7	1.0	1.1	1.2
OVERALL DIAMETER	mm	12.9	18.3	19.1	22.6	24.4	30.1	31.1	38.0	13.5	20.4	26.0	34.6	13.4	14.0	15.0
WEIGHT	kg/km	200	385	512	820	950	1080	1095	1805	285	680	1325	2106	180	300	180
COND. DC RES AT 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	19.3	19.3	19.3
COND. AC RES AT 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	24.6	24.6	24.6
IND. up to 1Khz	μH/km	720	720	720	720	720	720	720	720	720	720	720	720	670	670	670
REACTANCE AT 60Hz	Ω/km	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.154	0.154	0.154
IMP. at 60Hz and 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	19.3	19.3	19.3
IMP. at 60Hz and 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	24.6	24.6	24.6
L/R RATIO AT 90°C	μH/Ω	20	20	20	20	20	20	20	20	20	20	20	20	25	25	25
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	36.4	36.4	36.4
MUTUAL CAPACITANCE	μF/km	0.104	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.115	0.101	0.096
GLAND SIZE		O	A	A	B	B	C	C	C2	O	B	C	C2	O	O	O

CORE I.D. : BS6883 - SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.

## INSTRUMENTATION CABLES

EPR/COLL/SW4/GSWB/SW4 150/250V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

MACLEAN ELECTRICAL CABLE TYPE CODE	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34	E34
CONFIGURATION	1x2x1.5 ind. Screen	2x2x1.5	3x2x1.5	5x2x1.5	7x2x1.5	10x2x1.5	12x2x1.5	19x2x1.5	20x2x1.5	1x3x1.5 ind. Screen	3x3x1.5	5x3x1.5	7x3x1.5	12x3x1.5	1x2x2.5

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.67
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.1	1.2	1.3	1.4	1.4	1.7	1.7	1.9	1.9	1.1	1.3	1.5	1.5	1.8	1.1
DIA. OVER INNER SHEATH	mm	9.9	14.5	15.4	18.4	20.2	25.3	26.2	30.0	31.0	10.4	16.7	20.0	22.1	29.9	10.8
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.3	0.3	0.3	0.3	0.45	0.3
RAD. SHEATH THICKNESS	mm	1.2	1.4	1.4	1.6	1.6	1.9	1.9	2.1	2.1	1.2	1.5	1.6	1.7	2.0	1.2
OVERALL DIAMETER	mm	14.1	19.1	20.3	24.6	25.5	33.5	33.4	37.2	38.0	14.8	22.0	26.0	27.8	37.1	15.1
WEIGHT	kg/km	260	488	562	820	950	1320	1586	1914	2050	331	780	928	1409	2301	320
COND. DC RES AT 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
COND. AC RES AT 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
IND. up to 1Khz	μH/km	650	650	650	650	650	650	650	650	650	650	650	650	650	650	600
REACTANCE AT 60Hz	Ω/km	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.136
IMP. at 60Hz and 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
IMP. at 60Hz and 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
L/R RATIO AT 90°C	μH/Ω	30	30	30	30	30	30	30	30	30	30	30	30	30	30	40
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	15.1
MUTUAL CAPACITANCE	μF/km	0.128	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.111	0.105	0.105	0.105	0.105	0.148
GLAND SIZE		O	A	B	B	B	C	C2	C2	C2	O	B	B	C	C2	O

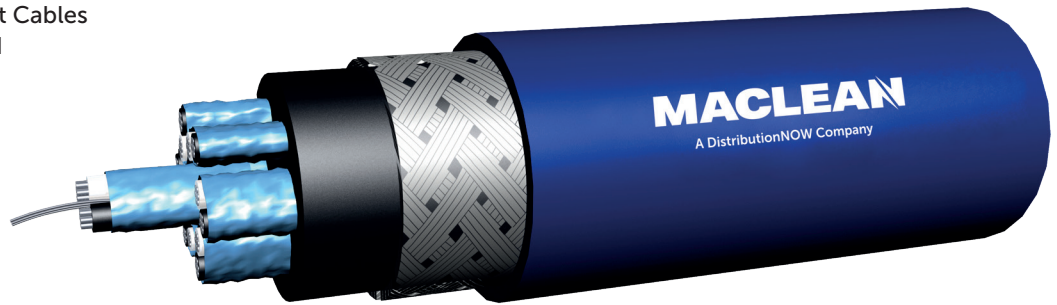
CORE I.D. : BS6883 - SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.



MacLean Electrical Type: E35  
 British Specification - BS 6883  
 Armoured Instrument Cables  
 Individually Screened  
 Flame Retardant  
 150/250 Volts



2

## Construction

Conductor:	Tinned stranded copper
Insulation:	EPR
Screening:	Individual screen, aluminium polyester tape with tinned stranded copper drain wire(s) Note 1. Cable with conductor CSA 1.5mm <sup>2</sup> and above will generally be supplied with an individual and collective screen
Inner Sheath:	SW4
Armour:	Galvanised steel wire braid
Outer Sheath:	SW4 HCL Emission <0.5% Oxygen Index >32
Core Identification:	Pairs - Black, White Triples - Black, White, Red Quads - Black, White, Red, Blue (Pairs and Triples are identified by printed numbers or tapes)
Outer Sheath Colours:	Blue, Grey or Black
Maximum Conductor Operating Temperature:	90°C
UKOOA Reference:	KH (Blue) KK (Grey)

## Application

Armoured cables for fixed wiring in ships and on mobile and fixed offshore units.

## Standards

BS6883:	Design guidelines for offshore cables
BS7655-1.2:	Insulating materials
BS7655-2.6:	Sheathing materials
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density



## INSTRUMENTATION CABLES

EPR/IND/SW4/GSWB/SW4 150/250V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE, GREY	KKF00	-	KKH00	-	KKJ00	-	KKK00	KKL00	KKR00	KKSO0	KKT00	KKU00
UKOOA CODE, BLUE	KHF00	-	KHH00	-	KHJ00	-	KHK00	KHL00	KHR00	KHS00	KHT00	KHU00
MACLEAN ELECTRICAL CABLE TYPE CODE	E34	E35	E35	E35	E35	E35	E35	E35	E35	E35	E35	E35
CONFIGURATION	1x2x.75	2x2x.75	3x2x.75	5x2x.75	7x2x.75	10x2x.75	12x2x.75	20x2x.75	1x3x.75	3x3x.75	7x3x.75	12x3x.75

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.2	1.2	1.2	1.5	1.4	1.4	1.6	1.8	1.0	1.3	1.5	1.7
DIA. OVER INNER SHEATH	mm	8.6	13.3	14.1	17.3	18.8	24.3	25.1	30.4	8.9	15.2	20.2	27.1
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.3	0.3	0.3	0.45
RAD. SHEATH THICKNESS	mm	1.25	1.4	1.4	1.5	1.6	1.8	1.8	2.0	2.0	1.5	1.7	2.0
OVERALL DIAMETER	mm	12.9	18.3	19.1	22.6	24.4	30.1	31.1	38.5	13.5	20.4	26.0	34.6
WEIGHT	kg/km	200	360	500	630	715	800	1150	1680	285	610	1010	1455
COND. DC RES AT 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
COND. AC RES AT 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
IND. up to 1Khz	μH/km	720	720	720	720	720	720	720	720	720	720	720	720
REACTANCE AT 60Hz	Ω/km	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162
IMP. at 60Hz and 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
IMP. at 60Hz and 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
L/R RATIO AT 90°C	μH/Ω	20	20	20	20	20	20	20	20	20	20	20	20
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6
MUTUAL CAPACITANCE	μF/km	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.092	0.092	0.092	0.092
GLAND SIZE		O	A	A	B	B	C	C	C2	O	B	B	C2

CORE I.D. : BS6883 - SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Note: Cable with conductor CSA 1.5mm<sup>2</sup> and above will generally be supplied with an individual and collective screen.

Stranding arrangements may change if Flexible Class II is offered.

## INSTRUMENTATION CABLES

EPR/IND/SW4/GSWB/SW4 150/250V FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

MACLEAN ELECTRICAL CABLE TYPE CODE	(E34)	E35	E35	E35	E35	E35	E35	E35	E35	(E34)	E35	E35	E35	E35	(E34)
CONFIGURATION	1x2x1.5	2x2x1.5	3x2x1.5	5x2x1.5	7x2x1.5	10x2x1.5	12x2x1.5	19x2x1.5	20x2x1.5	1x3x1.5	3x3x1.5	5x3x1.5	7x3x1.5	12x3x1.5	1x2x2.5

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.67
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.1	1.1	1.3	1.4	1.5	1.7	1.8	2.0	2.0	1.1	1.4	1.5	1.6	1.1
DIA. OVER INNER SHEATH	mm	9.9	15.1	16.2	19.8	21.7	27.9	28.9	34.7	36.4	10.4	17.4	21.2	23.3	10.8
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.45	0.3	0.3	0.3	0.3	0.3
RAD. SHEATH THICKNESS	mm	1.2	1.2	1.5	1.6	1.7	2.0	2.0	2.2	2.3	1.2	1.5	1.7	1.8	1.2
OVERALL DIAMETER	mm	14.1	17.5	21.6	25.3	27.4	35.3	36.5	42.5	44.6	14.8	22.8	26.9	29.2	15.1
WEIGHT	kg/km	260	600	705	820	1100	1550	1800	2210	2250	331	780	1100	1409	320
COND. DC RES AT 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
COND. AC RES AT 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
IND. up to 1Khz	μH/km	650	650	650	650	650	650	650	650	650	650	650	650	650	600
REACTANCE AT 60Hz	Ω/km	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.136
IMP. at 60Hz and 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
IMP. at 60Hz and 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
L/R RATIO AT 90°C	μH/Ω	30	30	30	30	30	30	30	30	30	30	30	30	30	40
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	15.1
MUTUAL CAPACITANCE	μF/km	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.111	0.111	0.111	0.111	0.148
GLAND SIZE		O	A	B	B	C	C2	C2	D	D	O	B	C	C	O

CORE I.D. : BS6883 - SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Note: Cable with conductor CSA 1.5mm<sup>2</sup> and above will generally be supplied with an individual and collective screen.

Stranding arrangements may change if Flexible Class II is offered.



MacLean Electrical Type: E40  
 British Specification - BS 7917  
 Armoured Instrument Cables  
 Collectively Screened  
 Fire Resistant  
 150/250 Volts



2

## Construction

Conductor:	Tinned stranded copper
Insulation:	Mica glass tape, extruded EPR
Screening:	Collective screen, aluminium polyester tape with tinned stranded copper drain wire
Inner Sheath:	SW4
Armour:	Galvanised steel wire braid
Outer Sheath:	SW4 HCL Emission <0.5% Oxygen Index >32
Core Identification:	Pairs - Black, White Triples - Black, White, Red Quads - Black, White, Red, Blue (Pairs, Triples and Quads are identified by printed numbers or tapes)
Outer Sheath Colours:	Blue, Grey or Black
Maximum Conductor Operating Temperature:	90°C
UKOOA Reference:	GL (Blue) GN (Grey)

## Application

For fixed wiring applications in ships and offshore units where circuit integrity is essential under fire conditions.

## Standards

BS7917:	Design guidelines for offshore fire resistant cables
IEC 60331-21:	Fire resistance
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density

*\*Note: MacLean Electrical offer many fire resistant cables that provide enhanced IEC 60331-21 performance at 950°C +/-50°C for 3 hours and to IEC 60331-1/2, 830°C for 2 hours*

## INSTRUMENTATION CABLES

MT/EPR/COLL/SW4/GSWB/SW4 150/250V FIRE RESISTANT TO IEC 60331-21, FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE, GREY	GNF00	GPX00	GNH00	-	GNJ00	-	GNK00	GNL00	GNR00	GNS00	GNT00	GNU00	GPF01	GPR01	GNX01
UKOOA CODE, BLUE	GLF00	GMX00	GLH00	-	GLJ00	-	GLK00	GLL00	GLR00	GLS00	GLT00	GLU00	GMF01	GMR01	GMX01
MACLEAN ELECTRICAL CABLE TYPE CODE	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40
CONFIGURATION	1x2x.75	1x4x.75	3x2x.75	5x2x.75	7x2x.75	10x2x.75	12x2x.75	20x2x.75	1x3x.75	3x3x.75	7x3x.75	12x3x.75	1x2x1.0	1x3x1.0	1x4x1.0

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	32/0.20	32/0.20	32/0.20
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.2	1.2	1.2	1.2	1.4	1.4	1.6	1.8	1.0	1.3	1.5	1.7	1.0	1.0	1.1
DIA. OVER INNER SHEATH	mm	8.9	13.2	13.9	16.6	18.1	22.5	23.3	28.6	9.2	15.8	20.7	28.1	9.8	10.0	11.3
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.3	0.3	0.3	0.45	0.3	0.3	0.3
RAD. SHEATH THICKNESS	mm	1.2	1.2	1.4	1.5	1.5	1.7	1.7	1.8	1.2	1.5	1.7	2.0	1.0	1.0	1.2
OVERALL DIAMETER	mm	13.2	17.9	18.7	21.7	23.7	28.1	29.6	35.9	13.8	20.0	25.3	33.6	14.0	14.3	15.3
WEIGHT	kg/km	200	390	450	656	760	1056	1279	1625	285	520	870	1500	180	300	430
COND. DC RES AT 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	19.3	19.3	19.3
COND. AC RES AT 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	24.6	24.6	24.6
IND. up to 1Khz	μH/km	720	720	720	720	720	720	720	720	720	720	720	720	670	670	670
REACTANCE AT 60Hz	Ω/km	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.164	0.164	0.164
IMP. at 60Hz and 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	19.3	19.3	19.3
IMP. at 60Hz and 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	24.6	24.6	24.6
L/R RATIO	μH/Ω	20	20	20	20	20	20	20	20	20	20	20	20	25	25	25
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	36.4	36.4	36.4
MUTUAL CAPACITANCE	μF/km	0.093	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.083	0.080	0.080	0.080	0.102	0.091	0.086
GLAND SIZE		O	A	A	B	B	C	C	C2	O	A	C	C2	O	O	O

CORE I.D. : BS7917 - SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.

## INSTRUMENTATION CABLES

MT/EPR/COLL/SW4/GSWB/SW4 150/250V FIRE RESISTANT TO IEC 60331-21, FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

MACLEAN ELECTRICAL CABLE TYPE CODE	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40	E40
CONFIGURATION	1x2x1.5	2x2x1.5	3x2x1.5	5x2x1.5	7x2x1.5	10x2x1.5	12x2x1.5	19x2x1.5	20x2x1.5	1x3x1.5	3x3x1.5	5x3x1.5	7x3x1.5	12x3x1.5	1x2x2.5

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.67
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.2	1.2	1.3	1.4	1.4	1.7	1.7	1.9	1.9	1.1	1.3	1.5	1.5	1.8	1.1
DIA. OVER INNER SHEATH	mm	10.5	15.1	16.0	19.0	20.8	25.9	26.8	31.7	33.2	10.7	17.6	21.7	24.2	33.5	11.4
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.3	0.3	0.3	0.3	0.3	0.3
RAD. SHEATH THICKNESS	mm	1.3	1.4	1.4	1.6	1.6	1.9	1.9	2.1	2.2	1.2	1.3	1.5	1.5	1.8	1.2
OVERALL DIAMETER	mm	14.7	19.7	20.9	24.5	26.1	32.2	34.0	39.1	40.3	15.1	22.9	27.5	29.9	40.7	15.7
WEIGHT	kg/km	260	488	562	820	950	1320	1586	1795	1910	331	780	928	1409	2301	290
COND. DC RES AT 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
COND. AC RES AT 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
IND. up to 1Khz	μH/km	650	650	650	650	650	650	650	650	650	650	650	650	650	650	600
REACTANCE AT 60Hz	Ω/km	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.145
IMP. at 60Hz and 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
IMP. at 60Hz and 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
L/R RATIO	μH/Ω	30	30	30	30	30	30	30	30	30	30	30	30	30	30	40
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	15.1
MUTUAL CAPACITANCE	μF/km	0.114	0.094	0.094	0.094	0.094	0.094	0.094	0.094	0.094	0.100	0.094	0.094	0.094	0.094	0.130
GLAND SIZE		O	B	B	B	C	C	C2	C2	D	O	B	C	C	C2	O

CORE I.D. : BS7917 - SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.



MacLean Electrical Type: E41  
British Specification - BS 7917  
Armoured Instrument Cables  
Individually Screened  
Fire Resistant  
150/250 Volts



2

**Construction**

<b>Conductor:</b>	Tinned stranded copper
<b>Insulation:</b>	Mica glass tape, extruded EPR
<b>Screening:</b>	Individual screen, aluminium back polyester tape with tinned stranded copper drain wire(s) Note: Cable with conductor CSA 1.5mm <sup>2</sup> and above will generally be supplied with an individual and collective screen
<b>Inner Sheath:</b>	SW4
<b>Armour:</b>	Galvanised steel wire braid
<b>Outer Sheath:</b>	SW4 HCL Emission <0.5% Oxygen Index >32
<b>Core Identification:</b>	Pairs - Black, White Triples - Black, White, Red Quads - Black, White, Red, Blue (Pairs and Triples are identified by printed numbers or tapes)
<b>Outer Sheath Colours:</b>	Blue, Grey or Black
<b>Maximum Conductor Operating Temperature:</b>	90°C
<b>UKOOA Reference:</b>	GM (Blue) GP (Grey)

**Application**

For fixed wiring applications in ships and offshore units where circuit integrity is essential under fire conditions.

**Standards**

BS7917:	Design guidelines for offshore fire resistant cables
IEC 60331-21:	Fire resistance
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density

*\*Note: MacLean Electrical offer many fire resistant cables that provide enhanced IEC 60331-21 performance at 950°C +/-50°C for 3 hours and to IEC 60331-1/2, 830°C for 2 hours*



## INSTRUMENTATION CABLES

MT/EPR/IND/SW4/GSWB/SW4 150/250V FIRE RESISTANT TO IEC 60331-21, FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

UKOOA CODE, GREY ind.	GPF00		-		GPH00		-		GPJ00		-		GPK00		GPL00		GPR00		GPS00		GPT00		GPU00		GPF01		GPR01		GPX01	
UKOOA CODE, BLUE ind.	GMF00		-		GMH00		-		GMJ00		-		GMK00		GML00		GMR00		GMS00		GMT00		GMU00		GMF01		GMR01		GMX01	
MACLEAN ELECTRICAL CABLE TYPE CODE	E40	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E41	E40	E40	E40	E40	E40	
CONFIGURATION	1x2x.75	2x2x.75	3x2x.75	5x2x.75	7x2x.75	10x2x.75	12x2x.75	20x2x.75	1x3x.75	3x3x.75	7x3x.75	12x3x.75	1x2x1.0	1x3x1.0	1x4x1.0															

### MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	24/0.20	32/0.20	32/0.20	32/0.20
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.2	1.2	1.2	1.5	1.4	1.4	1.6	1.8	1.0	1.3	1.5	1.7	1.0	1.1	1.1
DIA. OVER INNER SHEATH	mm	8.6	12.6	13.3	16.0	17.5	21.9	22.7	27.0	8.9	15.2	20.2	27.1	9.2	9.7	11
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.3	0.3	0.3	0.45	0.3	0.3	0.3
RAD. SHEATH THICKNESS	mm	1.2	1.4	1.4	1.4	1.7	1.7	1.7	2.0	2.0	1.2	1.4	1.7	1.0	1.1	1.2
OVERALL DIAMETER	mm	13.2	18.3	19.1	22.6	24.4	30.1	31.1	38.0	13.5	20.4	26.0	34.6	13.4	14.0	15.0
WEIGHT	kg/km	200	385	512	820	950	1080	1095	1805	285	680	1325	2106	180	300	180
COND. DC RES AT 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	19.3	19.3	19.3
COND. AC RES AT 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	24.6	24.6	24.6
IND. up to 1Khz	μH/km	720	720	720	720	720	720	720	720	720	720	720	720	670	670	670
REACTANCE AT 60Hz	Ω/km	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.164	0.164	0.164
IMP. at 60Hz and 20°C	Ω/km	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	19.3	19.3	19.3
IMP. at 60Hz and 90°C	Ω/km	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	24.6	24.6	24.6
L/R RATIO	μH/Ω	20	20	20	20	20	20	20	20	20	20	20	20	25	25	25
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	36.4	36.4	36.4
MUTUAL CAPACITANCE	μF/km	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.083	0.083	0.083	0.083	0.102	0.091	0.086
GLAND SIZE		O	A	B	B	B	C	C	C2	O	B	C	C2	O	O	O

CORE I.D. : BS7917 - SHEATH COLOUR : Grey or Blue as standard.

Cables shown with UKOOA codes are individual screen only.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Note: Cable with conductor CSA 1.5mm<sup>2</sup> and above will generally be supplied with an individual and collective screen.

Stranding arrangements may change if Flexible Class II is offered.

## INSTRUMENTATION CABLES

MT/EPR/IND/SW4/GSWB/SW4 150/250V FIRE RESISTANT TO IEC 60331-21, FLAME RETARDANT TO IEC 60332-3-22 (CAT A)

MACLEAN ELECTRICAL CABLE TYPE CODE	E40	E41	E41	E41	E41	E41	E41	E41	E41	E41	E40	E41	E41	E41	E41	E40
CONFIGURATION	1x2x1.5	2x2x1.5	3x2x1.5	5x2x1.5	7x2x1.5	10x2x1.5	12x2x1.5	19x2x1.5	20x2x1.5	1x3x1.5	3x3x1.5	5x3x1.5	7x3x1.5	12x3x1.5	1x2x2.5	

## MECHANICAL AND ELECTRICAL DATA

STRANDING ARRANGEMENT	mm	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.53	7/0.67
INSULATION THICKNESS	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
INNER SHEATH THICKNESS	mm	1.2	1.2	1.3	1.4	1.4	1.7	1.7	1.9	1.9	1.1	1.3	1.5	1.5	1.8	1.1
DIA. OVER INNER SHEATH	mm	10.5	14.5	15.4	18.4	20.2	25.3	26.2	30.0	31.0	10.4	16.7	20.0	22.1	29.9	10.8
DIAMETER OF BRAID WIRE	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.45	0.45	0.3	0.3	0.3	0.3	0.45	0.3
RAD. SHEATH THICKNESS	mm	1.3	1.4	1.4	1.6	1.6	1.9	1.9	2.1	2.1	1.2	1.5	1.6	1.7	2.0	1.2
OVERALL DIAMETER	mm	14.7	19.1	20.3	23.7	25.5	33.5	33.4	37.2	38.0	14.8	22.0	26.0	27.8	37.1	15.1
WEIGHT	kg/km	260	488	562	820	950	1320	1586	1914	2050	331	780	928	1409	2301	320
COND. DC RES AT 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
COND. AC RES AT 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
IND. up to 1Khz	μH/km	650	650	650	650	650	650	650	650	650	650	650	650	650	650	600
REACTANCE AT 60Hz	Ω/km	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.154	0.145
IMP. at 60Hz and 20°C	Ω/km	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.02
IMP. at 60Hz and 90°C	Ω/km	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	10.2
L/R RATIO	μH/Ω	30	30	30	30	30	30	30	30	30	30	30	30	30	30	40
COND. LOOP RES. at 20°C/km (2x1km of Core)	Ω	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	15.1
MUTUAL CAPACITANCE	μF/km	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.100	0.100	0.100	0.100	0.100	0.130
GLAND SIZE		O	B	B	B	C	C	C2	C2	D	O	B	C	C	C2	O

CORE I.D. : BS7917 - SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Note: Cable with conductor CSA 1.5mm<sup>2</sup> and above will generally be supplied with an individual and collective screen.

Stranding arrangements may change if Flexible Class II is offered.

**Offshore Cables**  
**NEK TS 606**

# Norwegian and International Marine Specification Cables

## Standards and tests

Norwegian Specification offshore topside cables are designed in accordance with the following major IEC-standards and tests

Standard	Title of standard
NEK TS 606	Cables for offshore installations halogen-free and/or mud resistant.
IEC 60092-350	Low voltage shipboard power cables. General construction and test requirements.
IEC 60092-352	Electrical installations in ships choice and installation of cables for low voltage power systems.
IEC 60092-353	Single and multi core non-radial field power cables with extruded solid insulation for rated voltages 1kV and 3kV.
IEC 60092-360	Insulation and sheathing materials for shipboard power, control and instrumentation cables.
IEC 60092-376	Electrical installations in ships - Cables for control instrumentation circuits 150/250V (300V).
IEC 60331-21	Fire resistance characteristics of electric cables circuit integrity test.
IEC 60331-1/2	Tests for electrical cables under fire conditions – circuit integrity – Test method for fire with shock at a temperature of at least 830°C. (Part 1 for cable with O.D. exceeding 20mm <sup>2</sup> , Part 2 for cable with O.D. not exceeding 20mm).
IEC 60332-1	Tests on electric cables under fire conditions. Test on a single vertical insulated wire or cable.
IEC 60332-3-22	Tests on electric cables under fire conditions. Tests for vertical flame spread of vertically-mounted bunched wires of cables - Category A.
IEC 60754-1/2	Test on gases evolved during combustion of electric cables. <b>Part 1:</b> Determination of the halogen acid gas. <b>Part 2:</b> Determination of the degree of acidity during the combustion of materials taken from electric cables by measuring pH and conductivity.
IEC 61034-1,2	Measurement of smoke density of cables burning under defined conditions.
CSA C22.2 N° 38-05*	Thermoset Insulated Wires and Cables - Wiring Products. <b>Clause 5.11</b> Cold Bend and Impact at -40° C

\*Upon request.

## Materials - Abbreviations - Code Designations

<b>Materials</b>	<b>1st Letter</b> Insulation	<b>2nd Letter</b> Bedding/ Inner covering Inner sheath	<b>3rd Letter</b> Armour/ screen	<b>4th Letter</b> Outer sheath
Fire resistant tape + insulation (Halogen-free)	B			
Ethylene propylene rubber - EPR	R			
Cross-linked polyethylene XLPE	T			
Thermoplastic compound (Halogen-free)	I			
Halogen-free thermoset compound EMA or EVA	U			
Fibre, tight buffered	A			
Fibre in loose tube	Q			
Bedding/Inner covering or taping (Halogen-free)		F		
Screen (poss. with PE or PP)		Y		
Aluminium (laminated to outer jacket)			L	
No armour			X	
Copper wire braid (Tinned or bare)			O	
Strength member of yarn			A	
Galvanised steel wire braid			C	
Thermoplastic compound (Halogen-free) SHF1		I		I
Halogen-free thermoset compound, SHF2				U
Halogen-free mud resistant thermoset compound, SHF Mud				U
Halogen-free mud resistant thermoplastic				B <sup>1)</sup>
<sup>1)</sup> QFCB Cables only				

MacLean Electrical Type: N01  
 NEK TS 606 Type: P108 (P15)  
 UX 1kV  
 Flame Retardant  
 Halogen Free



#### Construction

Conductor:	Tinned stranded copper PETP tape
Insulation:	Halogen-free thermoset compound in accordance with type SHF2 MUD HCL Emissions <0.5% Oxygen index >32
Outer Sheath Colours:	Green/Yellow for Earth cable
Maximum Conductor Operating Temperature:	90°C

#### Application

Insulated conductor for earthing and bonding.

#### Standards

NEK TS 606:	Cables for offshore installation
IEC 60092-353:	Design guidelines
IEC 60092-360:	Insulation and sheathing materials
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density

**Note:** Cold bend and impact (-40°C) CSA C22.2 No. 38-05 upon request.

## FLAME RETARDANT CABLES

UX 1000V HALOGEN FREE, NEK TS 606 Type: P108 (P15)

### MECHANICAL AND ELECTRICAL DATA

CONFIGURATION		1x16	1x25	1x35	1x50	1x70	1x95	1x120	1x150	1x185	1x240	1x300
CONDUCTOR DIAM	mm	5.2	6.6	7.7	9.1	10.9	12.6	14.2	15.9	17.7	20.2	22.6
INSULATION THICKNESS	mm	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIA. OVER INSULATION	mm	7.5	9.5	10.5	12.0	14.5	16.0	17.5	20.0	22.0	25.0	28.0
WEIGHT of CONDUCTOR	kg/km	180	275	370	510	725	960	1210	1560	1880	2450	3080

SHEATH COLOUR. : Green/Yellow and Black

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

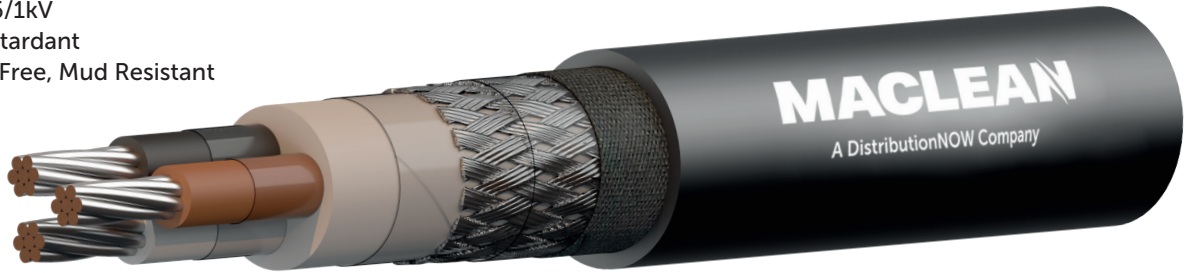
Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian**  
Group

MacLean Electrical Type: N02  
 NEK TS 606 Type: P101 (P1/P8)  
 RFOU 0.6/1kV  
 Flame Retardant  
 Halogen Free, Mud Resistant



### Construction

Conductor:	Tinned stranded copper												
Insulation:	EPR												
Bedding:	Halogen-free compound												
Armour:	Tinned copper wire braid												
Sheath:	Halogen-free, mud resistant thermoset compound in accordance with type SHF2 MUD HCL Emissions <0.5% Oxygen index >32												
Core Identification:	<table> <tr> <td>1 core</td> <td>- Black</td> </tr> <tr> <td>2 core</td> <td>- Blue/Brown</td> </tr> <tr> <td>3 core</td> <td>- Brown/Black/Grey (off-white)</td> </tr> <tr> <td>4 core</td> <td>- Blue/Brown/Black/Grey (off-white)</td> </tr> <tr> <td>5 core</td> <td>- Blue/Brown/Black/Grey (off-white)/Black</td> </tr> <tr> <td>Above 5 core</td> <td>- White core with black numbers</td> </tr> </table>	1 core	- Black	2 core	- Blue/Brown	3 core	- Brown/Black/Grey (off-white)	4 core	- Blue/Brown/Black/Grey (off-white)	5 core	- Blue/Brown/Black/Grey (off-white)/Black	Above 5 core	- White core with black numbers
1 core	- Black												
2 core	- Blue/Brown												
3 core	- Brown/Black/Grey (off-white)												
4 core	- Blue/Brown/Black/Grey (off-white)												
5 core	- Blue/Brown/Black/Grey (off-white)/Black												
Above 5 core	- White core with black numbers												
Outer Sheath Colours:	Black												
Maximum Conductor Operating Temperature:	90°C												

### Application

Generally: Fixed installation for power, control and lighting in both EX-and safe areas, general purposes.  
 For installations in areas exposed to MUD and drilling/cleaning fluids.

### Standards

NEK TS 606: Cables for offshore installation  
 IEC 60092-353: Design guidelines  
 IEC 60092-360: Insulation and sheathing materials  
 IEC 60332-3-22: (Category A) flame retardance  
 IEC 60754-1/2: Halogen free properties  
 IEC 61034-1/2: Smoke density

**Note:** Cold bend and impact (-40°C) CSA C22.2 No. 38-05 upon request.



**Draka**

A brand of the  
**Prysmian Group**



## FLAME RETARDANT OFFSHORE POWER & CONTROL CABLE

HALOGEN FREE, MUD RESISTANT 0.6/1kV NEK TS 606 Type: P101 (P1/P8)

### MECHANICAL DATA

No. & SIZE		1x16	1x25	1x35	1x50	1x70	1x95	1x120	1x150	1x185	1x240	1x300
CONDUCTOR DIAM	mm	4.80	6.30	7.10	8.30	10.00	11.70	13.00	14.30	16.30	18.70	21.70
INSULATION THICKNESS	mm	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIA. OVER INNER SHEATH	mm	10.1	11.7	13.0	14.3	16.2	18.5	19.6	21.4	23.9	27.3	30.7
OVERALL DIAMETER	mm	11.2	13.3	14.6	15.9	17.8	20.1	21.2	23.0	25.5	28.9	32.9
WEIGHT	kg/km	385	573	713	896	1160	1484	1758	2119	2558	3240	4050

No. & SIZE		2x1.5	2x2.5	2x4	2x6	2x10	2x16
CONDUCTOR DIAM	mm	1.60	2.00	2.60	3.20	3.80	4.80
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0
DIA. OVER INNER SHEATH	mm	10.2	11.2	12.8	13.8	14.8	16.9
OVERALL DIAMETER	mm	14.4	15.5	17.1	18.3	20.2	22.7
WEIGHT	kg/km	317	373	460	546	724	957

No. & SIZE		3x1.5	3x2.5	3x4	3x6	3x10	3x16	3x25	3x35	3x50	3x70	3x95	3x120	3x150+E	3x185+E	3x240+E
CONDUCTOR DIAM	mm	1.60	2.00	2.60	3.20	3.80	4.80	6.30	7.10	8.30	10.00	11.70	13.00	14.30	16.30	18.70
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2
DIA. OVER INNER SHEATH	mm	10.8	11.9	13.6	14.7	15.8	18.0	21.7	24.6	27.6	31.8	36.7	39.4	43.6	49.0	55.8
OVERALL DIAMETER	mm	15.0	16.1	17.8	19.1	21.1	23.6	27.6	30.9	34.6	39.4	45.2	48.5	54.0	61.0	68.5
WEIGHT	kg/km	349	417	521	627	857	1148	1609	2079	2780	3684	4929	5954	7520	9487	12050

SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian Group**

## FLAME RETARDANT OFFSHORE POWER & CONTROL CABLE

HALOGEN FREE, MUD RESISTANT 0.6/1kV NEK TS 606 Type: P101 (P1/P8)

### MECHANICAL DATA

No. & SIZE		4x1.5	4x2.5	4x4	4x6	4x10	4x16	4x25	4x35	4x50	4x70	4x95	4x120
CONDUCTOR DIAM	mm	1.60	2.00	2.60	3.20	3.80	4.80	6.30	7.10	8.30	10.00	11.70	13.00
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6
DIA. OVER INNER SHEATH	mm	11.7	12.9	14.8	16.0	17.2	19.7	23.8	27.1	30.4	35.0	40.5	43.5
OVERALL DIAMETER	mm	15.9	17.1	19.0	20.9	22.5	25.6	29.7	33.3	37.4	42.6	49.0	52.6
WEIGHT	kg/km	397	479	616	761	1009	1370	1938	2520	3387	4506	6042	7324

No. & SIZE		7x1.5	7x2.5	12x1.5	12x2.5	19x1.5	19x2.5	27x2.5	37x1.5	37x2.5
CONDUCTOR DIAM	mm	1.60	2.00	1.60	2.00	1.60	2.00	2.00	1.60	2.00
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DIA. OVER INNER SHEATH	mm	14.0	15.3	18.2	19.9	21.2	23.5	28.4	25.6	31.9
OVERALL DIAMETER	mm	18.2	19.9	23.6	25.5	27.0	29.3	34.6	31.8	38.6
WEIGHT	kg/km	570	657	805	995	1100	1360	1815	1840	2662

SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.

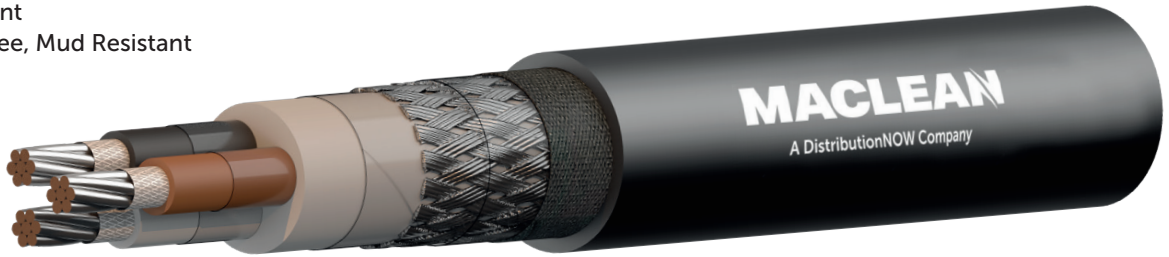


**Draka**

A brand of the  
**Prysmian**  
Group



MacLean Electrical Type: N05  
 NEK TS 606 Type: P105 (P5/P12)  
 BFOU 0.6/1kV  
 Fire Resistant  
 Halogen Free, Mud Resistant



### Construction

<b>Conductor:</b>	Tinned stranded copper																		
<b>Insulation:</b>	Mica glass tape, extruded EPR																		
<b>Bedding:</b>	Halogen-free compound																		
<b>Armour:</b>	Tinned copper wire braid																		
<b>Sheath:</b>	Halogen-free, mud resistant thermoset compound in accordance with type SHF2 MUD HCL Emission <0.5% Oxygen index >32																		
<b>Core Identification:</b>	<table> <tr> <td>1 core</td> <td>-</td> <td>Black</td> </tr> <tr> <td>2 core</td> <td>-</td> <td>Blue/Brown</td> </tr> <tr> <td>3 core</td> <td>-</td> <td>Brown/Black/Grey (off-white)</td> </tr> <tr> <td>4 core</td> <td>-</td> <td>Blue/Brown/Black/Grey (off-white)</td> </tr> <tr> <td>5 core</td> <td>-</td> <td>Blue/Brown/Black/Grey (off-white)/Black</td> </tr> <tr> <td>Above 5 core</td> <td>-</td> <td>White core with black numbers</td> </tr> </table>	1 core	-	Black	2 core	-	Blue/Brown	3 core	-	Brown/Black/Grey (off-white)	4 core	-	Blue/Brown/Black/Grey (off-white)	5 core	-	Blue/Brown/Black/Grey (off-white)/Black	Above 5 core	-	White core with black numbers
1 core	-	Black																	
2 core	-	Blue/Brown																	
3 core	-	Brown/Black/Grey (off-white)																	
4 core	-	Blue/Brown/Black/Grey (off-white)																	
5 core	-	Blue/Brown/Black/Grey (off-white)/Black																	
Above 5 core	-	White core with black numbers																	
<b>Outer Sheath Colours:</b>	Black																		
<b>Maximum Conductor Operating Temperature:</b>	90°C																		

### Application

Generally: Fixed installation for power, control and lighting in both EX-and safe areas, emergency and critical systems.  
 For installations in areas exposed to MUD and drilling/cleaning fluids.

### Standards

NEK TS 606:	Cables for offshore installation
IEC 60092-353:	Design guidelines
IEC 60092-360:	Insulation and sheathing materials
IEC 60331-1, -2, -21:	Fire resistance
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density

**Note:** Cold bend and impact (-40°C) CSA C22.2 No. 38-05 upon request.



**Draka**

A brand of the  
**Prysmian Group**

## FIRE RESISTANT OFFSHORE POWER & CONTROL CABLE

HALOGEN FREE, MUD RESISTANT 0.6/1kV NEK TS 606 Type: P105 (P5/P12)

### MECHANICAL DATA

No. & SIZE		1x16	1x25	1x35	1x50	1x70	1x95	1x120	1x150	1x185	1x240	1x300
CONDUCTOR DIAM	mm	4.8	6.3	7.1	8.3	10.0	11.7	13.0	14.3	16.3	18.7	21.7
INSULATION THICKNESS	mm	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2	2.4
DIA. OVER INNER SHEATH	mm	10.8	12.4	13.5	14.9	17.0	18.6	20.0	21.9	24.0	27.1	29.8
OVERALL DIAMETER	mm	15.0	17.2	18.5	20.3	22.6	24.4	26.0	28.1	30.4	33.7	36.6
WEIGHT	kg/km	437	597	730	927	1187	1487	1773	2139	2563	3232	3921

No. & SIZE		2x1.5	2x2.5	2x4	2x6	2x10	2x16
CONDUCTOR DIAM	mm	1.6	2.0	2.6	3.2	3.8	4.8
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0
DIA. OVER INNER SHEATH	mm	11.2	12.3	13.9	14.9	16.3	18.5
OVERALL DIAMETER	mm	15.5	16.5	18.1	19.3	21.6	24.3
WEIGHT	kg/km	353	411	501	589	794	1037

No. & SIZE		3x1.5	3x2.5	3x4	3x6	3x10	3x16	3x25	3x35	3x50	3x70	3x95	3x120	3x150+E	3x185+E	3x240+E
CONDUCTOR DIAM	mm	1.60	2.00	2.6	3.2	3.8	4.8	6.3	7.1	8.3	10.0	11.7	13.0	14.3	16.3	18.7
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0	2.2
DIA. OVER INNER SHEATH	mm	11.9	13.0	14.7	15.8	17.3	19.7	23.4	25.8	29.0	33.5	36.8	40.3	44.7	49.2	55.5
OVERALL DIAMETER	mm	16.1	17.2	19.0	20.7	22.6	25.5	29.2	32.0	36.0	41.1	45.3	49.5	55.1	61.2	68.2
WEIGHT	kg/km	389	458	565	685	930	1236	1706	2149	2872	3816	4940	6039	7641	9517	11999

SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

The current rating figures detailed are taken from IEC60092-352, Table A.4 Method E.

Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian Group**

## FIRE RESISTANT OFFSHORE POWER & CONTROL CABLE

HALOGEN FREE, MUD RESISTANT 0.6/1kV NEK TS 606 Type: P105 (P5/P12)

### MECHANICAL DATA

No. & SIZE		4x1.5	4x2.5	4x4	4x6	4x10	4x16	4x25	4x35	4x50	4x70	4x95	4x120
CONDUCTOR DIAM	mm	1.60	2.00	2.6	3.2	3.8	4.8	6.3	7.1	8.3	10.0	11.7	13.0
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6
DIA. OVER INNER SHEATH	mm	12.9	14.1	16.1	17.3	18.9	21.6	25.7	28.3	31.9	37.0	40.7	44.5
OVERALL DIAMETER	mm	17.1	18.4	20.7	22.1	24.3	27.5	31.5	34.6	38.9	44.6	49.2	53.7
WEIGHT	kg/km	442	526	680	814	1092	1469	2045	2596	3489	4653	6054	7415

No. & SIZE		7x1.5	7x2.5	12x1.5	12x2.5	19x1.5	19x2.5	27x1.5	27x2.5	37x1.5	37x2.5
CONDUCTOR DIAM	mm	1.60	2.00	1.60	2.00	1.60	2.00	1.60	2.00	1.60	2.00
INSULATION THICKNESS	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DIA. OVER INNER SHEATH	mm	15.5	16.8	20.3	22.1	23.8	26.1	28.7	31.5	32.4	35.5
OVERALL DIAMETER	mm	20.2	21.4	25.9	27.7	29.6	31.9	34.9	37.8	39.0	42.2
WEIGHT	kg/km	606	720	1028	1236	1356	1670	1885	2332	2357	2935

SHEATH COLOUR : Black as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian**  
Group



## RFOU P101 (P1/P8) - BFOU P105 (P5/P12)

0.6/1KV 1 CORE


**Draka** A brand of the  
**Prysmian Group**

## ELECTRICAL DATA

No. & SIZE		1x1.5	1x2.5	1x4.0	1x6.0	1x10	1x16	1x25	1x35	1x50	1x70	1x95	1x120	1x150	1x185	1x240	1x300
CURRENT RATING	A	20	27	37	48	68	93	120	145	180	232	285	332	385	445	530	610
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.21	0.35	0.58	0.87	1.46	2.33	3.65	5.11	7.30	10.20	13.90	17.50	21.90	27.00	35.00	43.80
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762	0.0607
COND. AC RES AT 90°C	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.937	0.675	0.499	0.344	0.249	0.196	0.161	0.128	0.0972	0.0775
CAPACITANCE	μF/km	0.184	0.228	0.271	0.324	0.375	0.453	0.451	0.519	0.548	0.595	0.718	0.738	0.683	0.689	0.719	0.884
REACTANCE AT 50Hz	Ω/km	0.131	0.123	0.114	0.105	0.103	0.098	0.093	0.092	0.090	0.088	0.085	0.084	0.088	0.085	0.083	0.084
REACTANCE AT 60Hz	Ω/km	0.157	0.148	0.137	0.126	0.124	0.117	0.112	0.110	0.108	0.105	0.102	0.101	0.105	0.102	0.099	0.101
INDUCTANCE	μH/km	417	391	364	335	330	311	298	293	286	278	270	269	278	269	262	269
IMP. AT 20°C and 50Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.16	0.739	0.537	0.401	0.284	0.213	0.175	0.154	0.131	0.113	0.102
IMP. AT 20°C and 60Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.17	0.742	0.540	0.406	0.290	0.220	0.184	0.164	0.143	0.125	0.118
IMP. AT 90°C and 50Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.942	0.681	0.507	0.355	0.263	0.213	0.183	0.154	0.128	0.114
IMP. AT 90°C and 60Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.49	0.944	0.684	0.511	0.360	0.269	0.220	0.192	0.164	0.139	0.127

0.6/1KV 2 CORES

## ELECTRICAL DATA

No. & SIZE		2x1.5	2x2.5	2x4.0	2x6.0	2x10	2x16	2x25	2x35	2x50	2x70	2x95
CURRENT RATING	A	23	31	43	55	77	102	130	160	195	230	272
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.21	0.35	0.58	0.87	1.46	2.33	3.65	5.11	7.30	10.20	13.90
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195
COND. AC RES AT 90°C	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.937	0.675	0.499	0.344	0.249
CAPACITANCE	μF/km	0.151	0.182	0.205	0.231	0.254	0.285	0.294	0.308	0.317	0.332	0.357
REACTANCE AT 50Hz	Ω/km	0.101	0.094	0.089	0.084	0.081	0.077	0.077	0.076	0.074	0.073	0.071
REACTANCE AT 60Hz	Ω/km	0.121	0.113	0.107	0.101	0.097	0.092	0.092	0.091	0.089	0.087	0.085
INDUCTANCE	μH/km	321	300	283	268	257	245	242	238	235	232	226
IMP. AT 20°C and 50Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.16	0.738	0.534	0.399	0.280	0.208
IMP. AT 20°C and 60Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.16	0.740	0.537	0.401	0.284	0.213
IMP. AT 90°C and 50Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.940	0.679	0.506	0.352	0.259
IMP. AT 90°C and 60Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.942	0.681	0.507	0.355	0.263



RFOU P101 (P1/P8) - BFOU P105 (P5/P12)  
0.6/1KV 3 CORES



**ELECTRICAL DATA**

No. & SIZE		3x1.5	3x2.5	3x4.0	3x6.0	3x10	3x16	3x25	3x35	3x50	3x70	3x95	3x120	3x150	3x185	3x240	3x300
CURRENT RATING	A	20	29	37	48	65	87	110	136	167	215	258	300	350	395	467	553
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.21	0.35	0.58	0.87	1.46	2.33	3.65	5.11	7.30	10.20	13.90	17.50	21.90	27.00	35.00	43.80
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762	0.0607
COND. AC RES AT 90°C	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.937	0.675	0.499	0.344	0.249	0.196	0.161	0.128	0.0972	0.0775
CAPACITANCE	μF/km	0.152	0.177	0.195	0.234	0.258	0.291	0.304	0.318	0.329	0.341	0.349	0.370	0.390	0.394	0.406	0.414
REACTANCE AT 50Hz	Ω/km	0.103	0.096	0.091	0.085	0.080	0.078	0.076	0.073	0.072	0.071	0.070	0.070	0.069	0.069	0.068	0.068
REACTANCE AT 60Hz	Ω/km	0.124	0.115	0.109	0.102	0.096	0.0934	0.0914	0.0876	0.0864	0.0852	0.0844	0.0836	0.0831	0.0828	0.0822	0.0816
INDUCTANCE	μH/km	329	305	289	271	255	248	242	232	229	226	225	222	221	220	218	216
IMP. AT 20°C and 50Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.16	0.738	0.534	0.398	0.279	0.207	0.160	0.144	0.121	0.102	0.091
IMP. AT 20°C and 60Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.16	0.740	0.536	0.400	0.283	0.212	0.175	0.151	0.130	0.112	0.102
IMP. AT 90°C and 50Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.940	0.679	0.504	0.351	0.259	0.208	0.175	0.145	0.119	0.103
IMP. AT 90°C and 60Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.941	0.680	0.506	0.354	0.263	0.213	0.181	0.153	0.127	0.113

0.6/1KV 4 CORES

**ELECTRICAL DATA**

No. & SIZE		4x1.5	4x2.5	4x4.0	4x6.0	4x10	4x16	4x25	4x35	4x50	4x70	4x95	4x120	4x150	4x185	4x240
CURRENT RATING	A	20	29	37	48	65	87	110	136	167	215	258	300	350	395	467
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.21	0.35	0.58	0.87	1.46	2.33	3.65	5.11	7.30	10.20	13.90	17.50	21.90	27.00	35.00
COND. DC RES AT 20°C	Ω/km	12.2	7.56	4.70	3.11	1.84	1.16	0.734	0.529	0.391	0.270	0.195	0.154	0.126	0.100	0.0762
COND. AC RES AT 90°C	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.937	0.675	0.499	0.344	0.249	0.196	0.161	0.128	0.0972
CAPACITANCE	μF/km	0.146	0.172	0.190	0.229	0.254	0.287	0.299	0.312	0.324	0.337	0.346	0.368	0.387	0.392	0.403
REACTANCE AT 50Hz	Ω/km	0.110	0.103	0.097	0.091	0.086	0.083	0.082	0.078	0.077	0.076	0.076	0.075	0.074	0.074	0.074
REACTANCE AT 60Hz	Ω/km	0.132	0.123	0.116	0.109	0.103	0.100	0.098	0.094	0.092	0.091	0.091	0.090	0.089	0.089	0.089
INDUCTANCE	μH/km	350	325	308	289	273	265	259	248	245	242	241	238	237	236	235
IMP. AT 20°C and 50Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.16	0.739	0.535	0.399	0.280	0.209	0.171	0.146	0.124	0.106
IMP. AT 20°C and 60Hz	Ω/km	12.20	7.56	4.70	3.11	1.84	1.16	0.741	0.537	0.402	0.285	0.215	0.178	0.154	0.134	0.117
IMP. AT 90°C and 50Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.941	0.679	0.505	0.352	0.260	0.210	0.177	0.148	0.122
IMP. AT 90°C and 60Hz	Ω/km	15.57	9.65	5.99	3.97	2.35	1.48	0.942	0.682	0.507	0.356	0.265	0.216	0.184	0.156	0.132

## RFOU P101 (P1/P8) - BFOU P105 (P5/P12)

0.6/1KV MULTI CORES



Draka

A brand of the  
Prysmian  
Group

## ELECTRICAL DATA

No. & SIZE		5x1.5	7x1.5	10x1.5	12x1.5	14x1.5	16x1.5	19x1.5	24x1.5	27x1.5	30x1.5	37x1.5
CURRENT RATING	A	12	11	10	9	9	8	8	7	7	6	6
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
COND. DC RES AT 20°C	Ω/km	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
COND. AC RES AT 90°C	Ω/km	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57
CAPACITANCE	μF/km	0.203	0.157	0.113	0.102	0.096	0.090	0.085	0.078	0.075	0.072	0.068
REACTANCE AT 50Hz	Ω/km	0.118	0.126	0.139	0.145	0.149	0.153	0.157	0.163	0.168	0.171	0.177
REACTANCE AT 60Hz	Ω/km	0.142	0.151	0.167	0.174	0.179	0.184	0.188	0.196	0.201	0.205	0.212
INDUCTANCE	μH/km	377	400	444	461	474	488	499	524	534	545	562
IMP. AT 20°C and 50Hz	Ω/km	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
IMP. AT 20°C and 60Hz	Ω/km	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
IMP. AT 90°C and 50Hz	Ω/km	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57
IMP. AT 90°C and 60Hz	Ω/km	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57	15.57

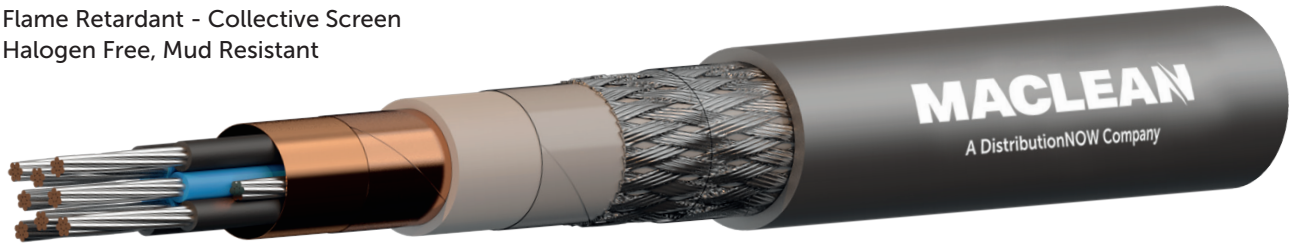
0.6/1KV MULTI CORES

## ELECTRICAL DATA

No. & SIZE		5x2.5	7x2.5	12x2.5	19x2.5	27x2.5	37x2.5
CURRENT RATING	A	17	15	12	11	9	9
SHORT CIRC. RATING, 1 SEC. (Conductor temp = 250°C)	kA	0.36	0.36	0.36	0.36	0.36	0.36
COND. DC RES AT 20°C	Ω/km	7.56	7.56	7.56	7.56	7.56	7.56
COND. AC RES AT 90°C	Ω/km	9.65	9.65	9.65	9.65	9.65	9.65
CAPACITANCE	μF/km	0.206	0.172	0.107	0.090	0.084	0.071
REACTANCE AT 50Hz	Ω/km	0.115	0.120	0.139	0.151	0.159	0.171
REACTANCE AT 60Hz	Ω/km	0.138	0.144	0.167	0.181	0.195	0.205
INDUCTANCE	μH/km	366	382	443	480	517	543
IMP. AT 20°C and 50Hz	Ω/km	7.56	7.56	7.56	7.56	7.56	7.56
IMP. AT 20°C and 60Hz	Ω/km	7.56	7.56	7.56	7.56	7.56	7.56
IMP. AT 90°C and 50Hz	Ω/km	9.65	9.65	9.65	9.65	9.65	9.65
IMP. AT 90°C and 60Hz	Ω/km	9.65	9.65	9.65	9.65	9.65	9.65



MacLean Electrical Type: N22  
 NEK TS 606 Type: S102 (S2/S6)  
 RFOU (c) 250V  
 Flame Retardant - Collective Screen  
 Halogen Free, Mud Resistant



## Construction

Conductor:	Tinned stranded copper
Insulation:	EPR
Twinning:	Colour coded cores twisted together and wrapped with polyester tape. Pairs/triples are laid up and collectively screened by copper backed polyester tape with tinned copper drain wire
Bedding:	Halogen-free compound
Armour:	Tinned copper wire braid
Sheath:	Halogen-free, mud resistant thermoset compound in accordance with SHF2 MUD HCL Emission <0.5% Oxygen Index >32
Core Identification:	Pair - Black /Light Blue Triple - Black /Light Blue/Brown (Pairs and Triples are identified by printed numbers or tapes)
Outer Sheath Colours:	Grey or Blue
Maximum Conductor Operating Temperature:	90°C

## Application

Generally: Fixed installation for instrumentation, communication, control and alarm systems in both EX- and safe areas.  
 For installations in areas exposed to MUD and drilling/cleaning fluids.

## Standards

NEK TS 606: Cables for offshore installation  
 IEC 60092-360: Insulation and sheathing materials  
 IEC 60092-376: Cables for control instrumentation circuits  
 IEC 60332-3-22: (Category A) flame retardance  
 IEC 60754-1/2: Halogen free properties  
 IEC 61034-1/2: Smoke density

Note: Cold bend and impact (-40°C) CSA C22.2 No. 38-05 upon request.



Draka

A brand of the  
 Prysmian  
 Group

## FLAME RETARDANT CABLES

COLLECTIVE SCREEN RFOU (c) 250V HALOGEN FREE, MUD RESISTANT, NEK TS 606 Type: S102 (S2/S6)

### MECHANICAL AND ELECTRICAL DATA

CONFIGURATION		2x2x.75	4x2x.75	8x2x.75	12x2x.75	16x2x.75	19x2x.75	24x2x.75	2x3x.75	4x3x.75	8x3x.75	12x3x.75	16x3x.75
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DIA. OVER INNER SHEATH	mm	11.8	13.6	17.2	20.4	23.5	25.3	28.1	12.9	14.9	19.7	23.1	26.6
OVERALL DIAMETER	mm	15.8	17.8	22.5	26.2	29.7	31.7	34.7	17.1	19.9	25.3	29.3	33.0
WEIGHT	kg/km	391	505	671	886	1173	1309	1562	457	630	852	1161	1490

CONFIGURATION		2x2x1.0	4x2x1.0	8x2x1.0	12x2x1.0	16x2x1.0	2x3x1.0	4x3x1.0	8x3x1.0	12x3x1.0
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DIA. OVER INNER SHEATH	mm	13.1	15.2	19.3	23.1	26.5	14.8	16.7	22.3	26.5
OVERALL DIAMETER	mm	17.3	19.8	24.9	28.8	32.7	18.6	21.7	28.0	32.7
WEIGHT	kg/km	466	609	801	1051	1392	538	749	1025	1433

CONFIGURATION		2x2x1.5	4x2x1.5	8x2x1.5	12x2x1.5	16x2x1.5	19x2x1.5	24x2x1.5	2x3x1.5	4x3x1.5	8x3x1.5	12x3x1.5
INSULATION THICKNESS	mm	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
DIA. OVER INNER SHEATH	mm	13.6	15.8	20.2	24.5	27.8	30.0	33.8	15.0	17.4	23.3	27.8
OVERALL DIAMETER	mm	17.9	20.9	26.0	30.7	34.4	36.6	41.0	19.8	22.5	29.5	34.4
WEIGHT	kg/km	507	709	917	1292	1630	1806	2271	624	838	1207	1692

CONDUCTOR CSA (mm <sup>2</sup> )	Pairs x0.75	Pairs x1	Pairs x1.50	Triples x0.75	Triples x1	Triples x1.50
CONDUCTOR RESISTANCE (Ω/km) 20°C	26.3	19.3	12.9	26.3	19.3	12.9
CONDUCTOR RESISTANCE (Ω/km) 90°C	33.18	24.5	16.34	33.18	24.5	16.34
REACTANCE (Ω/km) 50 Hz	0.243	0.180	0.155	0.128	0.093	0.78
REACTANCE (Ω/km) 60 Hz	0.291	0.216	0.186	0.154	0.111	0.093
CAPACITANCE approx (μFarad/km)	0.090	0.100	0.110	0.090	0.100	0.110
INDUCTANCE at 1 kHz nominal (μHenry/km)	680	640	630	680	640	630
IMPEDANCE 20°C 50 Hz & 60 Hz	26.3	19.3	12.9	26.3	19.3	12.9
IMPEDANCE 90°C 50 Hz & 60 Hz	33.18	24.5	16.34	33.18	24.5	16.34
L/R RATIO AT 1 kHz (μH/Ohm) max at 20°C	20	25	35	20	25	35

CORE I.D. : Black / Light Blue for pairs, Black / Light Blue / Brown for triples. SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

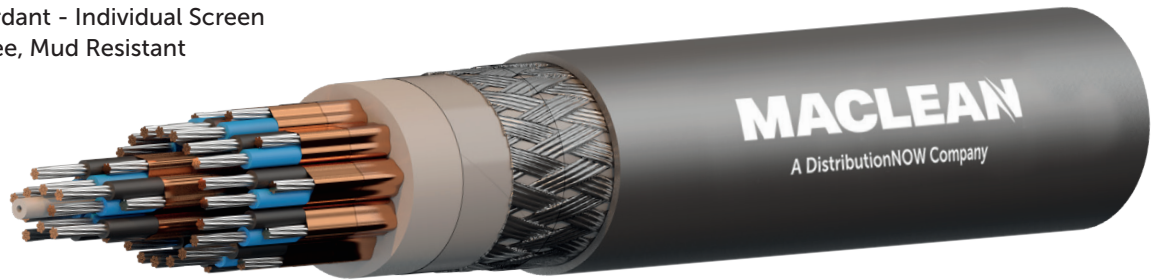
Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian Group**

MacLean Electrical Type: N23  
 NEK TS 606 Type: S101 (S1/S5)  
 RFOU (i) 250V  
 Flame Retardant - Individual Screen  
 Halogen Free, Mud Resistant



### Construction

Conductor:	Tinned stranded copper
Insulation:	EPR
Twinning:	Colour coded cores twisted together and wrapped with polyester tape. Pairs/triples are screened by copper backed polyester tape with tinned copper drain wire
Bedding:	Halogen-free compound
Armour:	Tinned copper wire braid
Sheath:	Halogen-free, mud resistant thermoset compound in accordance with SHF2 MUD HCL Emission <0.5% Oxygen Index >32
Core Identification:	Pair - Black/Light Blue Triple - Black/Light Blue/Brown (Pairs and Triples are identified by printed numbers or tapes)
Outer Sheath Colours:	Grey or Blue
Maximum Conductor Operating Temperature:	90°C

### Application

Generally: Fixed installation for instrumentation, communication, control and alarm systems in both EX- and safe areas.  
 For installation in areas exposed to MUD and drilling/cleaning fluids.

### Standards

NEK TS 606: Cables for offshore installation  
 IEC 60092-360: Insulation and sheathing materials  
 IEC 60092-376: Cables for control instrumentation circuits  
 IEC 60332-3-22: (Category A) flame retardance  
 IEC 60754-1/2: Halogen free properties  
 IEC 61034-1/2: Smoke density

**Note:** Cold bend and impact (-40°C) CSA C22.2 No. 38-05 upon request.



**Draka**

A brand of the  
**Prysmian Group**

## FLAME RETARDANT CABLES

INDIVIDUAL SCREEN RFOU (i) 250V HALOGEN FREE, MUD RESISTANT, NEK TS 606 Type: S101 (S1/S5)

### MECHANICAL AND ELECTRICAL DATA

CONFIGURATION		1x2x.75	2x2x.75	4x2x.75	8x2x.75	12x2x.75	16x2x.75	19x2x.75	24x2x.75	1x3x.75	2x3x.75	4x3x.75	8x3x.75	12x3x.75	16x3x.75
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DIA. OVER INNER SHEATH	mm	8.1	11.9	13.8	17.5	20.9	24.1	26.0	28.8	8.5	13.0	15.1	20.1	23.6	27.2
OVERALL DIAMETER	mm	12.0	16.0	18.0	22.8	26.8	30.3	32.3	35.5	12.3	17.2	20.2	25.7	29.8	33.6
WEIGHT	kg/km	228	408	551	765	1035	1374	1549	1850	248	477	684	954	1322	1710
CONFIGURATION		1x2x1.0	2x2x1.0	4x2x1.0	8x2x1.0	12x2x1.0	16x2x1.0	1x3x1.0	2x3x1.0	4x3x1.0	8x3x1.0	12x3x1.0			
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6			
DIA. OVER INNER SHEATH	mm	8.9	13.2	15.4	19.7	23.5	27.1	9.4	14.5	16.9	22.7	27.0			
OVERALL DIAMETER	mm	12.7	17.5	20.0	25.2	29.3	33.3	13.2	18.7	22.0	28.9	33.2			
WEIGHT	kg/km	258	484	658	902	1207	1610	281	557	799	1125	1590			
CONFIGURATION		1x2x1.5	2x2x1.5	4x2x1.5	8x2x1.5	12x2x1.5	16x2x1.5	19x2x1.5	24x2x1.5	1x3x1.5	2x3x1.5	4x3x1.5	8x3x1.5	12x3x1.5	
INSULATION THICKNESS	mm	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
DIA. OVER INNER SHEATH	mm	9.2	13.8	16.0	20.6	25.0	28.8	30.6	34.4	9.7	15.1	17.6	23.7	28.3	
OVERALL DIAMETER	mm	13.0	18.0	21.1	21.1	31.2	35.0	37.3	41.7	13.5	20.0	22.7	29.7	34.9	
WEIGHT	kg/km	227	525	759	1018	1452	1846	2068	2584	306	648	894	1318	1862	
CONDUCTOR CSA (mm <sup>2</sup> )		Pairs x0.75	Pairs x1	Pairs x1.50	Triples x0.75	Triples x1	Triples x1.50								
CONDUCTOR RESISTANCE (Ω/km) 20°C		26.3	19.3	12.9	26.3	19.3	12.9								
CONDUCTOR RESISTANCE (Ω/km) 90°C		33.18	24.5	16.34	33.18	24.5	16.34								
REACTANCE (Ω/km) 50 Hz		0.243	0.180	0.155	0.128	0.093	0.78								
REACTANCE (Ω/km) 60 Hz		0.291	0.216	0.186	0.154	0.111	0.093								
CAPACITANCE approx (μFarad/km)		0.090	0.100	0.110	0.090	0.100	0.110								
INDUCTANCE at 1 kHz nominal (μHenry/km)		680	640	630	680	640	630								
IMPEDANCE 20°C 50 Hz & 60 Hz		26.3	19.3	12.9	26.3	19.3	12.9								
IMPEDANCE 90°C 50 Hz & 60 Hz		33.18	24.5	16.34	33.18	24.5	16.34								
L/R RATIO AT 1 kHz (μH/Ohm) max at 20°C		20	25	35	20	25	35								

CORE I.D. : Black / Light Blue for pairs, Black / Light Blue / Brown for triples. SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

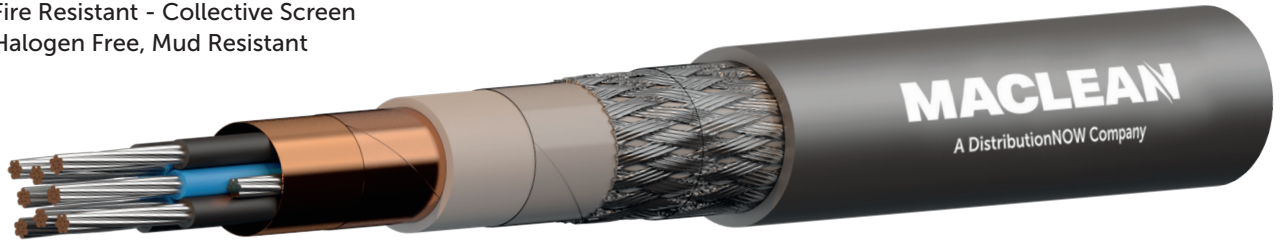
Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian Group**

MacLean Electrical Type: N28  
NEK TS 606 Type: S104 (S4/S8)  
BFOU (c) 250V  
Fire Resistant - Collective Screen  
Halogen Free, Mud Resistant



**Construction**

<b>Conductor:</b>	Tinned stranded copper
<b>Insulation:</b>	Mica glass tape, extruded EPR
<b>Twinning:</b>	Colour coded cores twisted together and wrapped with polyester tape. Pairs & triples are laid up and collectively screened by copper backed polyester tape with tinned copper drain wire
<b>Bedding:</b>	Halogen-free compound
<b>Armour:</b>	Tinned copper wire braid
<b>Sheath:</b>	Halogen-free, mud resistant thermoset compound in accordance with SHF2 MUD HCL Emission <0.5% Oxygen Index >32
<b>Core Identification:</b>	Pair - Black/Light Blue Triple - Black/Light Blue/Brown (Pairs and Triples are identified by printed numbers or tapes)
<b>Outer Sheath Colours:</b>	Grey or Blue
<b>Maximum Conductor Operating Temperature:</b>	90°C

**Application**

Generally: Fixed installation for instrumentation, communication, control, alarm, emergency and critical systems in both EX- and safe areas.  
For installations in areas exposed to MUD and drilling/cleaning fluids.

**Standards**

NEK TS 606:	Cables for offshore installation
IEC 60092-360:	Insulation and sheathing materials
IEC 60331-1, -2, -21:	Fire resistance
IEC 60332-3-22:	(Category A) flame retardance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density
IEC 60092-376:	Cables for control & instrumentation circuits

**Note:** Cold bend and impact (-40°C) CSA C22.2 No. 38-05 upon request.



## FIRE RESISTANT CABLES

COLLECTIVE SCREEN BFOU (c) 250V HALOGEN FREE, MUD RESISTANT, NEK TS 606 Type: S104 (S4/S8)

### MECHANICAL AND ELECTRICAL DATA

CONFIGURATION		2x2x.75	4x2x.75	8x2x.75	12x2x.75	16x2x.75	19x2x.75	24x2x.75	2x3x.75	4x3x.75	8x3x.75	12x3x.75
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DIA. OVER INNER SHEATH	mm	13.5	15.7	20.0	23.9	27.5	29.6	33.0	14.8	17.2	23.1	27.0
OVERALL DIAMETER	mm	17.5	20.3	25.3	29.6	33.7	36.1	39.6	19.0	22.3	28.6	33.2
WEIGHT	kg/km	463	611	768	1020	1353	1502	1790	542	744	979	1337
CONFIGURATION		2x2x1.0	4x2x1.0	8x2x1.0	12x2x1.0	16x2x1.0	19x2x1.0	24x2x1.0	2x3x1.0	4x3x1.0	8x3x1.0	12x3x1.0
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DIA. OVER INNER SHEATH	mm	14.8	17.3	22.1	26.5	30.5	33.0	36.7	16.3	19.0	25.6	30.5
OVERALL DIAMETER	mm	19.1	21.9	27.7	32.2	36.8	39.4	43.7	20.9	24.1	31.3	36.7
WEIGHT	kg/km	542	706	900	1185	1574	1748	2145	641	867	1039	1615
CONFIGURATION		2x2x1.5	4x2x1.5	8x2x1.5	12x2x1.5	16x2x1.5	19x2x1.5	24x2x1.5	2x3x1.5	4x3x1.5	8x3x1.5	12x3x1.5
INSULATION THICKNESS	mm	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
DIA. OVER INNER SHEATH	mm	15.4	17.9	23.0	28.0	31.8	34.4	38.6	16.9	19.7	26.6	31.7
OVERALL DIAMETER	mm	20.0	22.9	28.8	34.2	38.4	41.0	45.9	21.8	24.9	32.6	38.4
WEIGHT	kg/km	599	810	1018	1440	1815	2027	2525	722	960	1345	1875
CONDUCTOR CSA (mm <sup>2</sup> )		Pairs x0.75	Pairs x1	Pairs x1.50	Triples x0.75	Triples x1	Triples x1.50					
CONDUCTOR RESISTANCE (Ω/km) 20°C		26.3	19.3	12.9	26.3	19.3	12.9					
CONDUCTOR RESISTANCE (Ω/km) 90°C		33.18	24.5	16.34	33.18	24.5	16.34					
REACTANCE (Ω/km) 50 Hz		0.243	0.180	0.155	0.128	0.093	0.78					
REACTANCE (Ω/km) 60 Hz		0.291	0.216	0.186	0.154	0.111	0.093					
CAPACITANCE approx (µFarad/km)		0.090	0.100	0.110	0.090	0.100	0.110					
INDUCTANCE at 1 kHz nominal (µHenry/km)		680	640	630	680	640	630					
IMPEDANCE 20°C 50 Hz & 60 Hz		26.3	19.3	12.9	26.3	19.3	12.9					
IMPEDANCE 90°C 50 Hz & 60 Hz		33.18	24.5	16.34	33.18	24.5	16.34					
L/R RATIO AT 1 kHz (µH/Ohm) max at 20°C		20	25	35	20	25	35					

CORE I.D. : Black / Light Blue for pairs, Black / Light Blue / Brown for triples. SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

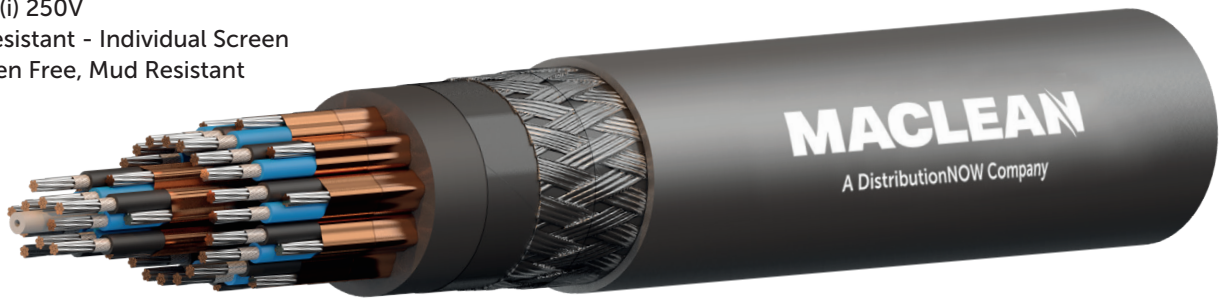
Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian Group**

MacLean Electrical Type: N29  
NEK TS 606 Type: S103 (S3/S7)  
BFOU (i) 250V  
Fire Resistant - Individual Screen  
Halogen Free, Mud Resistant



**Construction**

<b>Conductor:</b>	Tinned stranded copper
<b>Insulation:</b>	Mica glass tape, extruded EPR HCL Emissions <0.5% Oxygen index >32
<b>Twinning:</b>	Colour coded cores twisted together and wrapped with polyester tape. Pairs/triples are screened by copper backed polyester tape with tinned copper drain wire
<b>Bedding:</b>	Halogen-free compound
<b>Armour:</b>	Tinned copper wire braid
<b>Sheath:</b>	Halogen-free, mud resistant thermoset compound in accordance with SHF2 MUD
<b>Core Identification:</b>	Pair - Black /Light Blue Triple - Black /Light Blue /Brown (Pairs and Triples are identified by printed numbers or tapes)
<b>Outer Sheath Colours:</b>	Grey or Blue
<b>Maximum Conductor Operating Temperature:</b>	90°C

**Application**

Generally: Fixed installation for instrumentation, communication, control, alarm, emergency and critical systems in both EX- and safe areas.  
For installations in areas exposed to MUD and drilling/cleaning fluids.

**Standards**

NEK TS 606:	Cables for offshore installation
IEC 60092-360:	Insulation and sheathing materials
IEC 60332-3-22:	(Category A) flame retardance
IEC 60331-1, -2, -21:	Fire resistance
IEC 60754-1/2:	Halogen free properties
IEC 61034-1/2:	Smoke density
IEC 60092-376:	Cables for control & instrumentation circuits

**Note:** Cold bend and impact (-40°C) CSA C22.2 No. 38-05 upon request.

## FIRE RESISTANT CABLES

INDIVIDUAL SCREEN BFOU (i) 250V HALOGEN FREE, MUD RESISTANT NEK TS 606 Type: S103 (S3/S7)

### MECHANICAL DATA

CONFIGURATION		1x2x.75	2x2x.75	4x2x.75	8x2x.75	12x2x.75	16x2x.75	19x2x.75	24x2x.75	1x3x.75	2x3x.75	4x3x.75	8x3x.75	12x3x.75	16x3x.75
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DIA. OVER INNER SHEATH	mm	9.1	13.7	15.9	20.3	24.3	28.1	30.3	33.6	9.6	15.0	17.4	23.5	27.6	31.8
OVERALL DIAMETER	mm	13.0	17.7	20.5	25.7	30.1	34.3	36.7	40.3	13.5	19.6	22.5	29.0	33.8	38.2
WEIGHT	kg/km	259	479	655	860	1165	1550	1740	2075	281	574	795	1075	1491	1933

CONFIGURATION		2x2x1.0	4x2x1.0	8x2x1.0	12x2x1.0	16x2x1.0	1x3x1.0	2x3x1.0	4x3x1.0	8x3x1.0	12x3x1.0
INSULATION THICKNESS	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DIA. OVER INNER SHEATH	mm	16.1	18.6	23.8	28.3	32.7	11.5	17.5	20.6	27.3	32.6
OVERALL DIAMETER	mm	19.6	22.1	26.4	28.0	32.7	14.3	21.1	24.4	31.7	37.2
WEIGHT	kg/km	573	756	1000	1340	1789	315	659	918	1255	1770

CONFIGURATION		1x2x1.5	2x2x1.5	4x2x1.5	8x2x1.5	12x2x1.5	16x2x1.5	19x2x1.5	24x2x1.5	1x3x1.5	2x3x1.5	4x3x1.5	8x3x1.5	12x3x1.5
INSULATION THICKNESS	mm	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
DIA. OVER INNER SHEATH	mm	10.2	15.5	18.1	23.4	28.4	32.3	35.0	39.3	10.8	17.1	20.0	27.0	32.3
OVERALL DIAMETER	mm	14.1	20.2	23.1	29.1	34.6	39.0	41.6	46.5	14.6	21.9	25.1	33.0	38.9
WEIGHT	kg/km	310	616	861	1117	1593	2030	2261	2830	341	742	1015	1450	2044

CONDUCTOR CSA (mm <sup>2</sup> )		Pairs x0.75	Pairs x1	Pairs x1.50	Triples x0.75	Triples x1	Triples x1.50
CONDUCTOR RESISTANCE (Ω/km) 20°C		26.3	19.3	12.9	26.3	19.3	12.9
CONDUCTOR RESISTANCE (Ω/km) 90°C		33.18	24.5	16.34	33.18	24.5	16.34
REACTANCE (Ω/km) 50 Hz		0.243	0.180	0.155	0.128	0.093	0.78
REACTANCE (Ω/km) 60 Hz		0.291	0.216	0.186	0.154	0.111	0.093
CAPACITANCE approx (μFarad/km)		0.090	0.100	0.110	0.090	0.100	0.110
INDUCTANCE at 1 kHz nominal (μHenry/km)		680	640	630	680	640	630
IMPEDANCE 20°C 50 Hz & 60 Hz		26.3	19.3	12.9	26.3	19.3	12.9
IMPEDANCE 90°C 50 Hz & 60 Hz		33.18	24.5	16.34	33.18	24.5	16.34
L/R RATIO AT 1 kHz (μH/Ohm) max at 20°C		20	25	35	20	25	35

CORE I.D. : Black / Light Blue for pairs, Black / Light Blue / Brown for triples. SHEATH COLOUR : Grey or Blue as standard.

All cable dimensions are nominal. Actual dimensions should be confirmed at time of order.

Stranding arrangements may change if Flexible Class II is offered.



**Draka**

A brand of the  
**Prysmian Group**

Instrumentation

SECTION 3 - Norwegian Specification

**MACLEAN**  
A DistributionNOW Company



# FIREBAR®

## TOTAL SAFETY FIRE & WATER RESISTANT CABLE

When you need precious time to safely evacuate personnel and extinguish the fire, this CCI patented cable fully functions for 2 hours against the combined effects of:

- Fire
- Mechanical Shocks
- Water Spray
- Water Jets

Rigorously tested to BS7846:2000 Category F3 and BS8491 standards, the FIREBAR cable offers unequalled performance.

## **Disclaimer**

All information contained within this catalogue is for guidance only. All drawings, data and text are provided without warranty, expressed or implied, as to the accuracy, reliability or completeness of the furnished data.

## **Revision**

Catalogue Revision 07 / November 2021



# OFFSHORE CABLES

- MV POWER CABLES
- LV POWER CABLES
- CONTROL CABLES
- INSTRUMENTATION CABLES
- MUD RESISTANT CABLES

STANDARD COMPLIANCES  
BS 6883 • NEK 606 • IEEE 1580 – TYPE P



[www.untel.com.tr](http://www.untel.com.tr)



# MACLEAN

A DistributionNOW Company

## MacLean Electrical

Peterseat Park  
Peterseat Drive, Altens  
Aberdeen AB12 3HT U.K.  
+44 (0)1224 894212  
maclean-aberdeen@dnw.com  
www.maclean-international.com

## DistributionNOW

Moseidveien 9  
4033 Stavanger  
Norway  
+47 51 96 16 60  
distribution.norway@dnw.com  
www.distributionnow.com



### **WE WANT TO HEAR FROM YOU!**

Please send customer service comments  
and questions to [CP1@dnw.com](mailto:CP1@dnw.com)

© 2015 DistributionNOW  
All rights reserved.

DistributionNOW has produced this brochure for general information only, and it is not intended for design purposes. Although every effort has been made to maintain the accuracy and reliability of its contents, DistributionNOW in no way assumes responsibility for liability for any loss, damage or injury resulting from the use of information and data herein. All applications for the material described are at the user's risk and are the user's responsibility.