

# MARINE & OFFSHORE CABLES

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### ALLFLEX INDUSTRIALL MLG2 SINGLE SERIES

Ultra Performance Flexible Rubber Industrial / Marine Cable 0.6/1kV 90°C AS/NZS 5000.1, IEC 60092, H07RN-F



#### **APPLICATIONS:**

Hazardous Areas With correct explosion proof glands this cable can be installed in locations subject to explosion hazards rated 0.6/1kV (DIN VDE 0165).

Waste Water Treatment Plants Suitable for submersion in polluted liquids and aggressive environments up to 10 metres. Lighting & Entertainment With its extra durable CPE sheath this cable is suitable for outdoor temporary power supplies and lighting leads.

Marine Flexible tinned copper & Lloyds approved cable for installation in pleasure craft, super yachts and other marine applications.

**Power** Switchboards, flexible droppers from busbars, transformers and load banks. Also used on construction sites due to its outstanding flexibility, durability and industrial performance. Pumping Suitable for permanent submersion to 500 metres.

#### **PRODUCT FEATURES:**

- ► Tinned fine stranded copper conductor
- UV stabilised
- ▶ Flame retardant
- Water and moisture resistant
- Good elongation at break
- **Good Dielectric properties**
- Resistant to environmental factors such as oxidation, ozone and sunlight
- Very good behaviour to variations of outdoor temperature
- Suitable for permanent submersion to 500 metres
- Good tensile strength, tearing strength and abrasion resistance



#### **CONSTRUCTION:**

Conductor Annealed tinned copper stranded high flexibility (Class 5).

Insulation EPR R90.

Sheath CPE Elastomer Rubber.

#### CHARACTERISTICS:

**Operating Temperature Range** Fixed -40°C to 90°C / Flexing -25°C to 90°C.

Maximum Conductor Temperature 90°C. (Current ratings are based on 30°C air temp. See technical section for de-rating factors). Rated Voltage Uo/U 0.6/1kV.

Minimum Bending Radius Fixed 4 x cable diameter / flexing 6 x cable diameter.

Sheath Colour Black.

Insulation Colour White (Bonded).

Relevant Standards DIN VDE 0295, DIN VDE 0165, IEC 60092-353, IEC 60092-359, IEC 60092-351, AS/NZS 1125, AS/NZS 3808, RoHS Compliant.

AS/NZS 5000.1 Electric cables for working voltage 0.6/1kV.

IEC 60092-350 Electrical installations in ships - Part 350: General construction and test methods.

IEC 60332-3-22 Test for vertical flame spread of vertically-mounted bunched wires or cables.

**H07RN-F** Harmonised type heavy duty rubber cable construction. Certification Approvals Lloyds Type Approval CEF/SA.

Heat, oil and	Heat, oil and chemical resistant (See Technical Section)										
Code	No. of Cores x Size	Approx. Stranding No. of	Approx. Overall Diameter +/ - 10%	Approx. Weight	Nominal Amps un-enclosed pr sun @ 30°C fixed installation			3 Phase Volt Drop @50Hz / MAX. Conductor Temp			
	(mm²)	Wires x mm	(mm)	(Kg/Km)	Spaced 0000	Spaced from Surface	Touching	90°C (Mv/Am)			
<b>COMPLIES TO</b>	COMPLIES TO AS/NZS 5000.1, IEC 60092-350 & H07RN-F TYPE										
ML1/10G2	1 x 10.0	75/0.40	10.6	158	88	76	70	4.050			
ML1/16G2	1 x 16.0	118/0.40	11.8	225	117	100	94	2.550			
ML1/25G2	1 x 25.0	183/0.40	13.8	318	156	133	125	1.620			
ML1/35G2	1 x 35.0	260/0.40	15.2	415	195	166	155	1.170			
ML1/50G2	1 x 50.0	375/0.40	17.8	560	245	210	196	0.872			
ML1/70G2	1 x 70.0	334/0.40	20.1	788	311	265	248	0.615			
ML1/95G2	1 x 95.0	437/0.40	22.5	980	375	319	298	0.457			
ML1/120G2	1 x 120.0	561/0.40	24.4	1280	447	381	354	0.373			
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## ALLFLEX INDUSTRIALL MLG2 MULTI SERIES

Ultra Performance Flexible Rubber Industrial / Marine Cable 0.6/1kV 90°C AS/NZS 5000.1, IEC 60092, H07RN-F



**Hazardous Areas** With correct explosion proof glands this cable can be installed in locations subject to explosion hazards rated 0.6/1kV (DIN VDE 0165).

**Waste Water Treatment Plants** Suitable for submersion in polluted liquids and aggressive environments up to 10 metres.

**Lighting & Entertainment** With its extra durable CPE sheath this cable is suitable for outdoor temporary power supplies and lighting leads.

**Marine** Flexible tinned copper & Lloyds approved cable for installation in pleasure craft, super yachts and other marine applications.

**Power** Used on construction sites due to its outstanding flexibility, durability and industrial performance.

**Pumping** Suitable for permanent submersion to 500 metres.

#### **PRODUCT FEATURES:**

- ► Tinned fine stranded copper conductor
- UV stabilised
- ► Flame retardant
- ▶ Water and moisture resistant
- ► Good elongation at break
- ▶ Good Dielectric properties
- Resistant to environmental factors such as oxidation, ozone and sunlight
- ▶ Very good behaviour to variations of outdoor temperature
- Suitable for permanent submersion to 500 metres
- ▶ Good tensile strength, tearing strength and abrasion resistance
- ▶ Heat, oil and chemical resistant (See Technical Section)

See over for full product table ▶



#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

Insulation EPR R90.

Sheath CPE Elastomer Rubber.

#### **CHARACTERISTICS:**

**Operating Temperature Range** Fixed -40°C to 90°C / Flexing -25°C to 90°C.

**Maximum Conductor Temperature** 90°C.

Rated Voltage Uo/U 0.6/1kV.

**Minimum Bending Radius** Fixed 4 x cable diameter / flexing 6 x cable diameter.

Sheath Colour Black.

**Standard Core Colours** 

MLCON-G2

3 to 19 Core - Black Numbered + Green/Yellow

ML-G2

2 Core - Blue, Brown

3 Core - Blue, Brown, Green/Yellow

4 Core - Brown, Black, Grey, Green/Yellow

5 Core - Blue, Brown, Black, Grey, Green/Yellow

Multi Core - Black Numbered + Green/Yellow

**Relevant Standards** DIN VDE 0295, DIN VDE 0165, IEC 60092-360, IEC 60092-353, IEC 60092-359, IEC 60092-351, AS/NZS 1125, AS/NZS 3808, *ROHS* Compliant.

**AS/NZS 5000.1** Electric cables for working voltage 0.6/1kV.

IEC 60092-360 Electrical installations in ships - Part 360:

Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.

**IEC 60092-350** Electrical installations in ships - Part 350: General construction and test methods.

**IEC 60332-3-22** Test for vertical flame spread of vertically-mounted bunched wires or cables.

**H07RN-F** Harmonised type heavy duty rubber cable construction (1.5mm<sup>2</sup> and above).

Certification Approvals Lloyds Type Approval CEF/SA.



### ALLFLEX INDUSTRIALL MLG2 MULTI SERIES continued

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter +/ - 10%	Approx. Weight	Nominal Amps un-enclosed protected from sun @ 30°C fixed application	3 Phase Volt Drop @50Hz / MAX. Conductor Temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Touching	90°C (Mv/Am)
COMPLIES ONLY TO	IEC 60092-350	. CORE COLOU	RS: BLACK NUMBI	ERED + GRN/	YEL	
MLCON03/1.0BKG2	3 x 1.0	32 x 0.20	10.1	128	18	46.800
MLCON04/1.0BKG2	4 x 1.0	32 x 0.20	11.0	160	16	46.800
MLCON05/1.0BKG2	5 x 1.0	32 x 0.20	12.1	172	14	46.800
MLCON07/1.0BKG2	7 x 1.0	32 x 0.20	12.8	191	12	46.800
MLCON12/1.0BKG2	12 x 1.0	32 x 0.20	16.9	287	12	46.800
MLCON19/1.0BKG2	19 x 1.0	32 x 0.20	20.2	432	12	46.800
COMPLIES TO AS/NZ	S 5000.1, IEC 6	0092-350 & H	07RN-F TYPE			
ML02/1.5BKG2	2 x 1.5	30/0.25	10.8	130	25	30.000
ML02/2.5BKG2	2 x 2.5	50/0.25	11.8	190	33	16.400
ML02/4.0BKG2	2 x 4.0	56/0.30	13.2	260	44	10.200
ML02/6.0BKG2	2 x 6.0	84/0.30	15.0	350	56	6.800
ML02/10.0BKG2	2 x 10.0	80/0.40	20.1	538	67	4.050
ML02/16.0BKG2	2 x 16.0	128/0.40	22.9	749	89	2.550
ML03/1.5BKG2	3 x 1.5	30/0.25	11.6	160	21	30.000
ML03/2.5BKG2	3 x 2.5	50/0.25	12.7	230	29	16.400
ML03/4.0BKG2	3 x 4.0	56/0.30	14.2	320	37	10.200
ML03/6.0BKG2	3 x 6.0	84/0.30	16.1	425	47	6.800
ML03/10.0BKG2	3 x 10.0	80/0.40	21.5	765	67	4.050
ML03/16.0BKG2	3 x 16.0	128/0.40	24.0	1060	89	2.550
ML04/1.5BKG2	4 x 1.5	30/0.25	12.8	200	21	30.000
ML04/2.5BKG2	4 x 2.5	50/0.25	13.9	290	29	16.400
ML04/4.0BKG2	4 x 4.0	56/0.30	15.6	400	37	10.200
ML04/6.0BKG2	4 x 6.0	84/0.30	17.9	540	47	6.800
ML04/10.0BKG2	4 x 10.0	80/0.40	23.0	930	67	4.050
ML04/16.0BKG2	4 x 16.0	128/0.40	26.0	1300	89	2.550
ML04/25.0BKG2	4 x 25.0	200/0.40	32.0	1950	119	1.610
ML04/35.0BKG2	4 x 35.0	280/0.40	35.0	2330	149	1.170
ML04/50.0BKG2	4 x 50.0	400/0.40	40.0	3200	187	0.868
ML05/1.5BKG2	5 x 1.5	30/0.25	14.0	240	21	30.000
ML05/2.5BKG2	5 x 2.5	50/0.25	15.3	350	29	16.400
ML05/4.0BKG2	5 x 4.0	56/0.30	17.3	500	37	10.200
ML05/6.0BKG2	5 x 6.0	84/0.30	19.8	670	47	6.800
ML05/10.0BKG2	5 x 10.0	80/0.40	25.8	1140	67	4.050
ML05/16.0BKG2	5 x 16.0	128/0.40	29.0	1610	89	2.550
ML05/25.0BKG2	5 x 25.0	200/0.40	35.0	2440	119 149	1.610 1.170
ML05/35.0BKG2 ML05/50.0BKG2	5 x 35.0 5 x 50.0	280/0.40 400/0.40	38.0 47.0	3310 4120	187	0.868
ML05/50.0BKG2	7 x 1.5	30/0.25	15.3	330	15	30.000
ML07/1.5BKG2 ML07/2.5BKG2	7 x 1.5	50/0.25	17.0	470	20	16.400
ML12/1.5BKG2	12 x 1.5	30/0.25	20.8	470	15	30.000
ML12/1.5BKG2 ML12/2.5BKG2	12 x 1.5 12 x 2.5	50/0.25	20.8	690	20	16.400
ML19/1.5BKG2	12 x 2.5 19 x 1.5	30/0.25	24.7	710	15	30.000
WIL 13/ 1.3DNUZ	13 X 1.5	30/0.25	24.7	710	CI	30.000

Firstflex has taken every precaution to ensure accurate information in this catalogue, but accept no liability for any errors or omissions. Firstflex reserves the right to modify specifications at any time



### CHEMTUFF TWINSKIN HDT SERIES

Ultra Performance Flexible Rubber Cable Double Sheath 0.6/1kV 90°C

#### **APPLICATIONS:**

**Chemtuff** Used in applications that require a greater resistance to chemicals, solvents, oils and fats.

**Marine** Flexible tinned copper for installations on pleasure craft, ship to shore and other marine applications.

**Extension Leads** Used on construction sites due to its outstanding flexibility and cable memory. Suitable for tough climatic and mechanical conditions.

**Power** With a separator acting as a second sheath this cable provides extra safety for machine tools, construction and engineering equipment and conveyers.

**Pumping** Suitable for permanent submersion to 200 metres. **Lighting & Entertainment** With its extra durable SER sheath and high visibility, this cable is suitable for outdoor temporary power supply and lighting leads.

#### **PRODUCT FEATURES:**

- Yellow sheath for high visibility
- ► Tinned fine stranded copper conductor
- Non-marking sheath suits ship to shore use
- UV stabilised
- ► Flame retardant
- Extremely flexible
- ▶ Water and moisture resistant
- Suitable for permanent submersion to 200 metres
- ▶ Heat, oil and chemical resistant (See Technical Section)

See over for full product table



#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded extreme flexibility (Class 5 & 6).

Insulation X-90.

**Separator** An added separator or bedding of extruded V-90HT material for safety and durability. Silicate powder lubricant between cores and inner sheath to reduce friction.

Sheath SER105.

#### CHARACTERISTICS:

**Operating Temperature Range** Fixed -20°C to 90°C / Flexing -5°C to 90°C.

**Maximum Conductor Temperature** 90°C (Current ratings are based on 30°C air temp. See technical section for de-rating factors).

Rated Voltage Uo/U 0.6/1kV.

Max AC Operating Voltage Uo 0.7kV.

Minimum Bending Radius Fixed 5 x cable diameter /

Flexing 6 x cable diameter.

Sheath Colour Yellow

Standard Core Colour

3 Core - Blue, Brown, Green/Yellow.

4 Core - Grey, Brown, Black, Green/Yellow.

5 Core - Blue, Red, White, Black, Green/Yellow.

**Relevant Standards** AS/NZS 3191, AS/NZS 5000.1, AS/NZS 3308, IEC 60227, IEC 60332-1, *ROHS* Compliant.



### CHEMTUFF TWINSKIN HDT SERIES continued

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	Nominal Amps un-enclosed protected from sun @ 30°C fixed application	3 Phase Volt Drop @50Hz / MAX. Conductor Temp:	
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Touching	90°C (Mv/Am)	
HD03/1.5T	3 x 1.5	48/0.20	10.5	140	21	30.000	
HD03/2.5T	3 x 2.5	80/0.20	12.4	194	29	16.400	
HD03/4.0T	3 x 4.0	127/0.20	14.4	319	37	10.200	
HD03/6.0T	3 x 6.0	190/0.20	15.9	406	47	6.800	
HD04/1.5T	4 x 1.5	48/0.20	11.6	170	21	30.000	
HD04/2.5T	4 x 2.5	80/0.20	14.0	239	29	16.400	
HD04/4.0T	4 x 4.0	127/0.20	16.0	394	37	10.200	
HD04/6.0T	4 x 6.0	190/0.20	19.0	505	47	6.800	
HD05/1.5T	5 x 1.5	48/0.20	13.0	210	21	30.000	
HD05/2.5T	5 x 2.5	80/0.20	15.4	289	29	16.400	
HD05/4.0T	5 x 4.0	127/0.20	17.4	482	37	10.200	
HD05/6.0T	5 x 6.0	190/0.20	21.0	619	47	6.800	
HD05/10T	5 x 10.0	318/0.20	28.1	1190	67	4.050	
HD05/16T	5 x 16.0	504/0.20	31.7	1590	89	2.550	
HD05/35T	5 x 35.0	1120/0.20	36.6	3210	149	1.170	

### **MARINE & OFFSHORE CABLES**

## MSMA SERIES

Standard Performance Fixed LSHF CBS Shipboard / Offshore Power Cable 0.6/1kV 90°C

#### **APPLICATIONS:**

**Marine** For fixed wiring installations on oil and gas rigs, shipboard and other marine applications requiring screened cable for EMC. **Rail or Rolling Stock** Suitable for wiring in locomotives, rail cars, buses and coaches.

#### **PRODUCT FEATURES:**

- ► Low smoke halogen free
- ▶ PVC free
- ▶ Lloyds approved
- UV stabilised
- ► Flame retardant
- ▶ To be earthed at both ends using EMC compatible glands
- ▶ Heat, oil and chemical resistant (See Technical Section)



#### CONSTRUCTION:

**Conductor** Annealed plain copper stranded (Class 2). **Insulation** XLPE halogen free X90.

Inner Covering (If any) Halogen free compound (IEC 60092-353).

Sheath Polyolefine compound SHF (IEC 60092-353 & 3.7.3A).

#### **CHARACTERISTICS:**

**Screening** Tinned or plain copper braid.

**Operating Temperature Range** Fixed -15°C to 90°C.

**Maximum Conductor temperature** 90°C (Current ratings are based on 30°C air temp. See technical section for de-rating factors).

Rated Voltage Uo/U 0.6/1kV Max AC Operating Voltage Uo 0.7kV.

Minimum Bending Radius Up to 25mm<sup>2</sup> 4 x cable diameter /

Over 25mm<sup>2</sup> 6 x cable diameter.

Sheath Colour Orange or Black.

#### **Standard Core Colours**

Without Earth Conductor:

2 Core - Blue, Brown.

3 Core - Grey, Black, Brown.

4 Core – Blue, Black, Grey, Brown.

Multi Core - Black Numbered.

**Certification Society Approvals** Lloyds, Type CJPJ85 or HFX-A/CU, ABS type YOZp, BV type YOZp, DNV.GL type YOZp other approvals available on request.

**Relevant Standards** IEC 61034, IEC 60754, IEC 60332-3-22, IEC 60092-350/351/352/353/359, IEC 60754-1/2, IEC 61034-1/2, IEC 60332-1, **C** € Directive 2006/95/EC, **RoHS** Compliant.

#### SINGLE CORE

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	un-enclo	Nominal Amps sed protected f xed installation	rom sun	3 Phase Volt Drop @ 50Hz / MAX. conductor temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Spaced	Spaced from Surface	Touching	90°C (Mv/Am)
MSMA1/10	1 x 10.0	7/1.35	9.2	170	88	76	94	4.050
MSMA1/16	1 x 16.0	7/1.70 1		235	117	100	125	2.550
MSMA1/25	1 x 25.0	7/2.13	12.0	350	156	133	155	1.620
MSMA1/35	1 x 35.0	7/2.52	12.8	440	195	166	196	1.170
MSMA1/50	1 x 50.0	19/1.83	16.0	660	245	210	248	0.872
MSMA1/70	1 x 70.0	19/2.17	18.0	890	311	265	298	0.615

Product table continued over



### MSMA SERIES continued

#### SINGLE CORE

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	un-enclo	Nominal Amps sed protected f xed installation	rom sun	3 Phase Volt Drop @ 50Hz / MAX. conductor temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Spaced	Spaced from Surface	Touching	90°C (Mv/Am)
MSMA1/95	1 x 95.0	19/2.52	20.0	1180	375	319	354	0.457
MSMA1/120	1 x 120.0	37/2.03	21.5	1440	447	381	409	0.373
MSMA1/150	1 x 150.0	37/2.27	24.0	1760	517	440	409	0.316
MSMA1/185	1 x 185.0	37/2.52	26.0	2140	594	505	470	0.269
MSMA1/240	1 x 240.0	61/2.24	29.0	2760	716	608	565	0.227

#### **MULTI CORE**

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	Nominal Amps un-enclosed protected from sun @ 30°C fixed application	3 Phase Volt Drop @ 50Hz / MAX. conductor temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Touching 🐯	90°C (Mv/Am)
MSMA2/1.5	2 x 1.5	7/0.52	10.2	120	25	30.000
MSMA2/2.5	2 x 2.5	7/0.67	11.1	150	33	16.400
MSMA2/4.0	2 x 4.0	7/0.85	12.3	195	44	10.200
MSMA2/10	2 x 10.0	7/1.35	16.0	425	79	4.050
MSMA2/16	2 x 16.0	7/1.70	18.5	590	106	2.550
MSMA2/25	2 x 25.0	7/2.13	22.1	860	141	1.610
MSMA3/1.5	3 x 1.5	7/0.52	10.4	145	25	30.000
MSMA3/2.5	3 x 2.5	7/0.67	11.0	185	33	16.400
MSMA3/4.0	3 x 4.0	7/0.85	12.4	243	44	10.200
MSMA3/6.0	3 x 6.0	7/1.05	13.6	340	56	6.800
MSMA3/10	3 x 10.0	7/1.35	16.0	520	79	4.050
MSMA3/16	3 x 16.0	7/1.70	19.0	750	106	2.550
MSMA3/25	3 x 25.0	7/2.13	22.5	1120	141	1.610
MSMA3/35	3 x 35.0	7/2.52	26.5	1660	149	1.170
MSMA3/50	3 x 50.0	19/1.83	29.0	2100	187	0.868
MSMA3/70	3 x 70.0	19/2.17	34.0	2950	235	0.609
MSMA3/95	3 x 95.0	19/2.52	39.0	4010	282	0.450
MSMA3/120	3 x 120.0	37/2.03	42.0	4990	333	0.366
MSMA4/1.5	4 x 1.5	7/0.52	10.8	180	21	30.000
MSMA4/2.5	4 x 2.5	7/0.67	12.2	225	29	16.400
MSMA4/4.0	4 x 4.0	7/0.85	13.4	305	37	10.200
MSMA4/6.0	4 x 6.0	7/1.05	15.5	410	47	6.800
MSMA4/10	4 x 10.0	7/1.35	18.0	635	67	4.050
MSMA4/25	4 x 25.0	7/2.13	25.0	1360	119	1.610

Product table continued over



### MSMA SERIES continued

#### **MULTI CORE**

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	Nominal Amps un-enclosed protected from sun @ 30°C fixed application	3 Phase Volt Drop @ 50Hz / MAX. conductor temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Touching	90°C (Mv/Am)
MSMA4/35	4 x 35.0	7/2.52	29.0	2070	149	1.170
MSMA4/50	4 x 50.0	19/1.83	32.0	2640	187	0.868
MSMA4/70	4 x 70.0	19/2.17	37.5	3700	235	0.609
MSMA4/95	4 x 95.0	19/2.52	42.5	5070	282	0.450
MSMA4/120	4 x 120.0	37/2.03	46.5	6300	333	0.366
MSMA5/1.5	5 x 1.5	7/0.52	12.0	200	21	30.000
MSMA5/2.5	5 x 2.5	7/0.67	12.6	242	29	16.400
MSMA5/4.0	5 x 4.0 7/0.85		16.2	346	37	10.200
MSMA5/6.0	5 x 6.0	7/1.05	18.1	479	47	6.800
MSMA5/10	5 x 10.0	7/1.35	20.3	737	67	4.050
MSMA5/16	5 x 16.0	7/1.70	24.5	1156	89	2.550
MSMA5/25	5 x 25.0	7/2.13	29.2	1781	119	1.610
MSMA5/35	5 x 35.0	7.252	33.4	2537	149	1.170
MSMA7/1.5	7 x 1.5	7/0.52	12.8	245	15	30.000
MSMA10/1.5	10 x 1.5	7/0.52	16.5	380	15	30.000
MSMA12/1.5	12 x 1.5	7/0.52	17.5	435	15	30.000
MSMA14/1.5	14 x 1.5	7/0.52	18.5	485	15	30.000
MSMA16/1.5	16 x 1.5	7/0.52	19.0	530	15	30.000
MSMA19/1.5	19 x 1.5	7/0.52	20.0	610	15	30.000
MSMA24/1.5	24 x 1.5	7/0.52	23.5	760	15	30.000
MSMA27/1.5	27 x 1.5	7/0.52	24.0	830	15	30.000
MSMA30/1.5	30 x 1.5	7/0.52	24.5	900	15	30.000
MSMA37/1.5	37 x 1.5	7/0.52	26.5	1060	15	30.000

### SOU SERIES

Standard Performance Fixed LSHF

**CBS Shipboard / Offshore Data** Cable 250V 90°C

#### **APPLICATIONS:**

Marine For fixed wiring installations on oil and gas rigs, shipboard and other marine applications requiring screened cable for EMC. Rail or Rolling Stock Suitable for wiring in locomotives, rail cars, buses and coaches.

Small Spaces Lightweight and small-diameter solution compared to braided cables.

#### **PRODUCT FEATURES:**

- ► Low smoke halogen free
- PVC free
- UV stabilised
- ► Flame retardant
- ▶ Heat, oil and chemical resistant (See Technical Section)

See over for full product table ▶

#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded (Class 2). Insulation HF-XLPE X90.

**Laying Up** Cores in twisted pairs, triples or quads. Screening Collective shield of aluminium/polyester tape c/w tinned copper stranded drain wire and synthetic tape. Sheath SHF1 low smoke halogen free.

#### **CHARACTERISTICS:**

Operating Temperature Range Fixed -15°C to 75°C.

**Maximum Conductor temperature** 90°C.

Rated Voltage 250V (RMS) radial thickness sheath (not suitable for mains connection).

Minimum Bending Radius Fixed 8 x cable diameter. Sheath Colour Grey.

Standard Core Colours Numbered Black and Blue pairs. Certification Society Approvals Lloyds, Type CHJPJP or HFX-OSU-T, YZafc, ABS, BV, DNV.GL type YOZp. Relevant Standards IEC 60228 CL.2.

IEC 60092-376/350/351/352/353/359, IEC 60332-1, IEC 60332-3-22, IEC 60754-1/2, IEC 610034-1/2, **C** € Directive 2006/95/EC, **RoHS** Compliant.



### **SOU SERIES continued**

No. of   N	Code	No. of Cores	Approx.	Approx.	Approx.
WHERE A TIME    SOUDO 1/2/0.5   1 PAIR 0.5   7/0.30   6.1   6.0	Couc	x Size	Stranding	Overall Diameter	Weight
\$\text{SOU02/2/0.5} & 2 PAIR 0.5 & 7/0.30 & 8.9 & 100 \\ \$\text{SOU04/2/0.5} & 4 PAIR 0.5 & 7/0.30 & 10.2 & 130 \\ \$\text{SOU07/2/0.5} & 7 PAIR 0.5 & 7/0.30 & 10.2 & 130 \\ \$\text{SOU07/2/0.5} & 10 PAIR 0.5 & 7/0.30 & 15.0 & 265 \\ \$\text{SOU10/2/0.5} & 10 PAIR 0.5 & 7/0.30 & 15.0 & 265 \\ \$\text{SOU14/2/0.5} & 14 PAIR 0.5 & 7/0.30 & 16.9 & 350 \\ \$\text{SOU14/2/0.5} & 19 PAIR 0.5 & 7/0.30 & 19.2 & 450 \\ \$\text{SOU24/2/0.5} & 24 PAIR 0.5 & 7/0.30 & 21.4 & 560 \\ \$\text{SOU30/2/0.5} & 30 PAIR 0.5 & 7/0.30 & 23.7 & 660 \\ \$\text{SOU30/2/0.5} & 30 PAIR 0.5 & 7/0.30 & 7.1 & 80 \\ \$\text{SOU01/4/0.5} & 1 QUAD 0.5 & 7/0.30 & 7.1 & 80 \\ \$\text{SOU01/2/0.75} & 1 PAIR 0.75 & 7/0.37 & 6.4 & 7.5 \\ \$\text{SOU02/2/0.75} & 2 PAIR 0.75 & 7/0.37 & 9.0 & 135 \\ \$\text{SOU04/2/0.75} & 4 PAIR 0.75 & 7/0.37 & 11.3 & 175 \\ \$\text{SOU04/2/0.75} & 4 PAIR 0.75 & 7/0.37 & 11.3 & 175 \\ \$\text{SOU04/2/0.75} & 10 PAIR 0.75 & 7/0.37 & 13.4 & 270 \\ \$\text{SOU10/2/0.75} & 19 PAIR 0.75 & 7/0.37 & 16.3 & 370 \\ \$\text{SOU14/2/0.75} & 14 PAIR 0.75 & 7/0.37 & 18.4 & 490 \\ \$\text{SOU14/2/0.75} & 14 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU14/2/0.75} & 24 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU20/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU20/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU01/4/0.75} & 10 QAD 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU01/4/0.75} & 10 QAD 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU01/2/1.0} & 1 PAIR 1.0 & 7/0.43 & 7.9 & 75 \\ \$\text{SOU02/2/1.0} & 2 PAIR 1.0 & 7/0.43 & 10.2 & 130 \\ \$\text{SOU04/2/1.0} & 1 PAIR 1.0 & 7/0.43 & 10.2 & 130 \\ \$\text{SOU04/2/1.0} & 1 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU19/2/1.0} & 10 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU19/2/1.0} & 10 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU19/2/1.0} & 10 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU04/2/1.0} & 10 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU04/2/1.0} & 10 PAIR 1.0 & 7/0.43 & 22.4 & 760 \\ \$\text{SOU19/2/1.0} & 10 PAIR 1.0 & 7/0.43 & 27.7 & 1180 \\ \$\text{SOU04/2/1.0} & 10 PAIR 1.0 &		(mm²)		(mm)	(Kg/Km)
\$\text{SOU04/2/0.5} & 4 PAIR 0.5 & 7/0.30 & 10.2 & 130 \\ \$\text{SOU07/2/0.5} & 7 PAIR 0.5 & 7/0.30 & 12.3 & 195 \\ \$\text{SOU10/2/0.5} & 10 PAIR 0.5 & 7/0.30 & 15.0 & 265 \\ \$\text{SOU10/2/0.5} & 14 PAIR 0.5 & 7/0.30 & 16.9 & 350 \\ \$\text{SOU19/2/0.5} & 19 PAIR 0.5 & 7/0.30 & 16.9 & 350 \\ \$\text{SOU19/2/0.5} & 19 PAIR 0.5 & 7/0.30 & 19.2 & 450 \\ \$\text{SOU19/2/0.5} & 24 PAIR 0.5 & 7/0.30 & 21.4 & 560 \\ \$\text{SOU30/2/0.5} & 30 PAIR 0.5 & 7/0.30 & 21.4 & 560 \\ \$\text{SOU30/2/0.5} & 30 PAIR 0.5 & 7/0.30 & 7.1 & 80 \\ \$\text{SOU30/2/0.75} & 1 PAIR 0.75 & 7/0.37 & 6.4 & 75 \\ \$\text{SOU00/2/0.75} & 1 PAIR 0.75 & 7/0.37 & 9.0 & 135 \\ \$\text{SOU00/2/0.75} & 2 PAIR 0.75 & 7/0.37 & 9.0 & 135 \\ \$\text{SOU00/2/0.75} & 4 PAIR 0.75 & 7/0.37 & 11.3 & 175 \\ \$\text{SOU00/2/0.75} & 7 PAIR 0.75 & 7/0.37 & 13.4 & 270 \\ \$\text{SOU10/2/0.75} & 10 PAIR 0.75 & 7/0.37 & 16.3 & 370 \\ \$\text{SOU10/2/0.75} & 14 PAIR 0.75 & 7/0.37 & 16.3 & 370 \\ \$\text{SOU10/2/0.75} & 14 PAIR 0.75 & 7/0.37 & 18.4 & 490 \\ \$\text{SOU19/2/0.75} & 19 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU19/2/0.75} & 24 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU30/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU30/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 23.6 & 800 \\ \$\text{SOU00/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 7.3 & 100 \\ \$\text{SOU00/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 7.3 & 100 \\ \$\text{SOU00/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 7.3 & 100 \\ \$\text{SOU00/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 7.3 & 100 \\ \$\text{SOU00/2/0.75} & 30 PAIR 0.75 & 7/0.37 & 7.3 & 100 \\ \$\text{SOU00/2/0.75} & 30 PAIR 1.0 & 7/0.43 & 19.2 & 130 \\ \$\text{SOU00/2/1.0} & 1 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU00/2/1.0} & 1 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU00/2/1.0} & 19 PAIR 1.0 & 7/0.43 & 19.5 & 590 \\ \$\text{SOU00/2/1.0} & 19 PAIR 1.0 & 7/0.43 & 22.4 & 760 \\ \$\text{SOU00/2/1.0} & 19 PAIR 1.0 & 7/0.43 & 27.7 & 1180 \\ \$\text{SOU00/2/1.0} & 19 PAIR 1.0 & 7/0.43 & 27.7 & 1180 \\ \$\text{SOU00/2/1.0} & 19 PAIR 1.0 & 7/0.43 & 27.7 & 1180 \\ \$\text{SOU00/2/1.0} &	SOU01/2/0.5	1 PAIR 0.5	7/0.30	6.1	60
\$\text{SOU07/2/0.5}\$ 7 PAIR 0.5 7/0.30 12.3 195 \$\text{SOU107/2/0.5}\$ 10 PAIR 0.5 7/0.30 15.0 265 \$\text{SOU14/2/0.5}\$ 14 PAIR 0.5 7/0.30 16.9 350 \$\text{SOU14/2/0.5}\$ 14 PAIR 0.5 7/0.30 19.2 450 \$\text{SOU14/2/0.5}\$ 24 PAIR 0.5 7/0.30 19.2 450 \$\text{SOU24/2/0.5}\$ 24 PAIR 0.5 7/0.30 21.4 560 \$\text{SOU24/2/0.5}\$ 30 PAIR 0.5 7/0.30 21.4 560 \$\text{SOU20/2/0.5}\$ 30 PAIR 0.5 7/0.30 23.7 660 \$\text{SOU001/2/0.75}\$ 1 PAIR 0.75 7/0.37 6.4 75 \$\text{SOU001/2/0.75}\$ 1 PAIR 0.75 7/0.37 6.4 75 \$\text{SOU001/2/0.75}\$ 2 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU001/2/0.75}\$ 4 PAIR 0.75 7/0.37 11.3 175 \$\text{SOU001/2/0.75}\$ 7 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU10/2/0.75}\$ 10 PAIR 0.75 7/0.37 16.3 370 \$\text{SOU10/2/0.75}\$ 10 PAIR 0.75 7/0.37 16.3 370 \$\text{SOU10/2/0.75}\$ 10 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU10/2/0.75}\$ 19 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU10/2/0.75}\$ 19 PAIR 0.75 7/0.37 21.1 640 \$\text{SOU19/2/0.75}\$ 24 PAIR 0.75 7/0.37 21.1 640 \$\text{SOU20/2/0.75}\$ 24 PAIR 0.75 7/0.37 21.1 640 \$\text{SOU20/2/0.75}\$ 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU00/2/0.75}\$ 30 PAIR 0.75 7/0.37 26.1 960 \$\text{SOU00/2/0.75}\$ 30 PAIR 0.75 7/0.37 26.1 960 \$\text{SOU00/2/0.75}\$ 10 PAIR 1.0 7/0.43 7.9 7.5 \$\text{SOU00/2/1.0}\$ 1 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU00/2/1.0}\$ 4 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU00/2/1.0}\$ 4 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU00/2/1.0}\$ 4 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU00/2/1.0}\$ 4 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU00/2/1.0}\$ 4 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU00/2/1.0}\$ 50000/2/1.0 10 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU00/2/1.0}\$ 19 PAIR 1.0 7/0.43 17.5 450 \$\text	SOU02/2/0.5	2 PAIR 0.5	7/0.30	8.9	100
SOU10/2/0.5         10 PAIR 0.5         7/0.30         15.0         265           SOU14/2/0.5         14 PAIR 0.5         7/0.30         16.9         350           SOU19/2/0.5         14 PAIR 0.5         7/0.30         19.2         450           SOU24/2/0.5         24 PAIR 0.5         7/0.30         21.4         560           SOU30/2/0.5         30 PAIR 0.5         7/0.30         23.7         660           SOU30/2/0.75         1 PAIR 0.75         7/0.30         71         80           SOU01/2/0.75         1 PAIR 0.75         7/0.37         6.4         75           SOU02/2/0.75         2 PAIR 0.75         7/0.37         9.0         135           SOU04/2/0.75         4 PAIR 0.75         7/0.37         11.3         175           SOU04/2/0.75         4 PAIR 0.75         7/0.37         11.3         175           SOU10/2/0.75         7 PAIR 0.75         7/0.37         18.4         270           SOU14/2/0.75         1 PAIR 0.75         7/0.37         18.4         490           SOU14/2/0.75         19 PAIR 0.75         7/0.37         21.1         640           SOU19/2/0.75         30 PAIR 0.75         7/0.37         23.6         800           SO	SOU04/2/0.5	4 PAIR 0.5	7/0.30	10.2	130
SOU14/2/0.5         14 PAIR 0.5         7/0.30         16.9         350           SOU19/2/0.5         19 PAIR 0.5         7/0.30         19.2         450           SOU24/2/0.5         24 PAIR 0.5         7/0.30         21.4         560           SOU30/2/0.5         30 PAIR 0.5         7/0.30         23.7         660           SOU01/4/0.5         1 QUAD 0.5         7/0.30         71         80           SOU01/2/0.75         1 PAIR 0.75         7/0.37         6.4         75           SOU02/2/0.75         2 PAIR 0.75         7/0.37         9.0         135           SOU07/2/0.75         4 PAIR 0.75         7/0.37         11.3         175           SOU07/2/0.75         4 PAIR 0.75         7/0.37         13.4         270           SOU10/2/0.75         10 PAIR 0.75         7/0.37         16.3         370           SOU14/2/0.75         10 PAIR 0.75         7/0.37         18.4         490           SOU19/2/0.75         19 PAIR 0.75         7/0.37         21.1         640           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800 <th< td=""><td>SOU07/2/0.5</td><td>7 PAIR 0.5</td><td>7/0.30</td><td>12.3</td><td>195</td></th<>	SOU07/2/0.5	7 PAIR 0.5	7/0.30	12.3	195
SOU19/2/0.5         19 PAIR 0.5         7/0.30         19.2         450           SOU24/2/0.5         24 PAIR 0.5         7/0.30         21.4         560           SOU30/2/0.5         30 PAIR 0.5         7/0.30         23.7         660           SOU01/4/0.5         1 QUAD 0.5         7/0.30         7.1         80           SOU01/2/0.75         1 PAIR 0.75         7/0.37         6.4         75           SOU02/2/0.75         2 PAIR 0.75         7/0.37         9.0         135           SOU04/2/0.75         4 PAIR 0.75         7/0.37         11.3         175           SOU40/2/0.75         4 PAIR 0.75         7/0.37         13.4         270           SOU19/2/0.75         10 PAIR 0.75         7/0.37         16.3         370           SOU19/2/0.75         14 PAIR 0.75         7/0.37         18.4         490           SOU19/2/0.75         19 PAIR 0.75         7/0.37         21.1         640           SOU24/2/0.75         19 PAIR 0.75         7/0.37         23.6         800           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800           SOU24/2/0.75         30 PAIR 0.75         7/0.37         26.1         990           <	SOU10/2/0.5	10 PAIR 0.5	7/0.30	15.0	265
\$\text{SOU24/2/0.5} 24 PAIR 0.5 7/0.30 21.4 560 \$\text{SOU30/2/0.5} 30 PAIR 0.5 7/0.30 23.7 660 \$\text{SOU30/2/0.75} 1 OUAD 0.5 7/0.30 7.1 80 \$\text{SOU01/2/0.75} 1 PAIR 0.75 7/0.37 6.4 75 \$\text{SOU02/2/0.75} 2 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75} 4 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75} 4 PAIR 0.75 7/0.37 11.3 175 \$\text{SOU04/2/0.75} 7 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU07/2/0.75} 10 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU10/2/0.75} 10 PAIR 0.75 7/0.37 16.3 370 \$\text{SOU14/2/0.75} 14 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU19/2/0.75} 19 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU19/2/0.75} 19 PAIR 0.75 7/0.37 21.1 640 \$\text{SOU24/2/0.75} 24 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75} 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75} 30 PAIR 0.75 7/0.37 26.1 960 \$\text{SOU014/0.75} 10 UAD 0.75 7/0.37 7.3 100 \$\text{SOU012/1.0} 1 PAIR 1.0 7/0.43 7.9 75 \$\text{SOU012/1.0} 2 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU012/1.0} 2 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU012/1.0} 10 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU012/1.0} 10 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU012/1.0} 10 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU19/2/1.0} 19 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU19/2/1.0} 19 PAIR 1.0 7/0.43 12.4 760 \$\text{SOU19/2/1.0} 19 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU19/2/1.0} 19 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU01/2/1.0} 10 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU01/2/1.0} 10 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU01/2/1.5} 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU01/2/1.5} 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU01/2/1.5} 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU01/2/1.5} 1 PAIR 1.5 7/0.52 7.0 12.0 590 \$\text{SOU1/2/1.5} 1 PAIR 1.5 7/0.52 7.0 12.0 590 \$\text{SOU1/2/1.5} 1 PAIR 1.5 7/0.52 7.0 12.0 590 \$\text{SOU1/2/1.5} 1 PAIR 1.5 7/0.52 7.0 2.0 12.0 590 \$\text{SOU1/2/1.5} 1 PAIR 1.5 7/0.52 7.0 2.0 2.0 100 \$\text{SOU1/2/1.5} 1 PAIR 1.5 7/0.52 7.0 2.0 2.0 100 \$\text{SOU1/2/1.5} 1 PAIR 1.5 7/0.52 7.0 2.0 2.0 2.0 100 \$\text	SOU14/2/0.5	14 PAIR 0.5	7/0.30	16.9	350
\$\text{SOU30/2/0.5}\$ 30 PAIR 0.5 7/0.30 23.7 660 \$\text{SOU014/0.5}\$ 1 QUAD 0.5 7/0.30 7.1 80 \$\text{SOU012/0.75}\$ 1 PAIR 0.75 7/0.37 6.4 75 \$\text{SOU02/2/0.75}\$ 2 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75}\$ 4 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75}\$ 7 PAIR 0.75 7/0.37 11.3 175 \$\text{SOU07/2/0.75}\$ 7 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU01/2/0.75}\$ 10 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU14/2/0.75}\$ 10 PAIR 0.75 7/0.37 16.3 370 \$\text{SOU14/2/0.75}\$ 14 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU14/2/0.75}\$ 19 PAIR 0.75 7/0.37 21.1 640 \$\text{SOU14/2/0.75}\$ 24 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU19/2/0.75}\$ 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75}\$ 30 PAIR 0.75 7/0.37 26.1 960 \$\text{SOU30/2/0.75}\$ 30 PAIR 0.75 7/0.37 7.3 100 \$\text{SOU01/2/1.0}\$ 1 QUAD 0.75 7/0.37 7.3 100 \$\text{SOU01/2/1.0}\$ 1 PAIR 1.0 7/0.43 7.9 75 \$\text{SOU01/2/1.0}\$ 1 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU04/2/1.0}\$ 2 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU07/2/1.0}\$ 2 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU01/2/1.0}\$ 10 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU19/2/1.0}\$ 19 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU14/2/1.0}\$ 14 PAIR 1.0 7/0.43 17.5 590 \$\text{SOU14/2/1.0}\$ 19 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU14/2/1.0}\$ 19 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU14/2/1.0}\$ 24 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU04/2/1.0}\$ 24 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU14/2/1.0}\$ 30 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU04/2/1.0}\$ 30 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU04/2/1.0}\$ 19 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU04/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU04/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU04/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.0 12.0 590 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 12.0 590 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 2.2 1.0 590 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 2.2 2.36 7.80 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 2.2 2.36 7.80 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 2.2 2.36 7.80 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 2.2 2.2 1.00 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 2.2 2.2 1.00 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7	SOU19/2/0.5	19 PAIR 0.5	7/0.30	19.2	450
\$\text{SOU01/4/0.5}\$ 1 QUAD 0.5 7/0.30 7.1 80 \$\text{SOU01/2/0.75}\$ 1 PAIR 0.75 7/0.37 6.4 75 \$\text{SOU02/2/0.75}\$ 2 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75}\$ 4 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75}\$ 4 PAIR 0.75 7/0.37 11.3 175 \$\text{SOU04/2/0.75}\$ 7 PAIR 0.75 7/0.37 11.3 175 \$\text{SOU04/2/0.75}\$ 10 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU10/2/0.75}\$ 10 PAIR 0.75 7/0.37 16.3 370 \$\text{SOU14/2/0.75}\$ 14 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU14/2/0.75}\$ 19 PAIR 0.75 7/0.37 21.1 640 \$\text{SOU24/2/0.75}\$ 24 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75}\$ 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75}\$ 30 PAIR 0.75 7/0.37 26.1 960 \$\text{SOU30/2/0.75}\$ 10 QUAD 0.75 7/0.37 7.3 100 \$\text{SOU30/2/0.75}\$ 10 QUAD 0.75 7/0.37 7.3 100 \$\text{SOU30/2/1.0}\$ 1 PAIR 1.0 7/0.43 7.9 75 \$\text{SOU02/2/1.0}\$ 2 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU04/2/1.0}\$ 4 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU04/2/1.0}\$ 10 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU04/2/1.0}\$ 10 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU10/2/1.0}\$ 10 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU14/2/1.0}\$ 14 PAIR 1.0 7/0.43 19.5 590 \$\text{SOU14/2/1.0}\$ 19 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU14/2/1.0}\$ 19 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU30/2/1.0}\$ 30 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU04/2/1.0}\$ 30 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU04/2/1.0}\$ 10 PAIR 1.0 7/0.52 7.8 90 \$\text{SOU04/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU04/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU04/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.0 120 \$\text{SOU04/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 23.6 7.80 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 24 15 \$\text{SOU14/2/1.5}\$ 14 PAIR 1.5 7/0.52 7.0 23.6 7.0 25 7.0 25 7.0 25 7.0 25 7.0 25 7.0 2	SOU24/2/0.5	24 PAIR 0.5	7/0.30	21.4	560
\$\text{SOU01/2/0.75}\$ 1 PAIR 0.75 7/0.37 6.4 75 \$\text{SOU02/2/0.75}\$ 2 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75}\$ 4 PAIR 0.75 7/0.37 11.3 175 \$\text{SOU04/2/0.75}\$ 7 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU01/2/0.75}\$ 7 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU10/2/0.75}\$ 10 PAIR 0.75 7/0.37 16.3 370 \$\text{SOU14/2/0.75}\$ 14 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU19/2/0.75}\$ 19 PAIR 0.75 7/0.37 21.1 640 \$\text{SOU24/2/0.75}\$ 24 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU24/2/0.75}\$ 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75}\$ 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75}\$ 1 QUAD 0.75 7/0.37 7.3 100 \$\text{SOU01/2/1.0}\$ 1 PAIR 1.0 7/0.43 7.9 75 \$\text{SOU01/2/1.0}\$ 1 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU04/2/1.0}\$ 2 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU07/2/1.0}\$ 4 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU07/2/1.0}\$ 7 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU1/2/1.0}\$ 10 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU1/2/1.0}\$ 19 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU1/2/1.0}\$ 19 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU1/2/1.0}\$ 19 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU1/2/1.0}\$ 24 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU1/2/1.0}\$ 20 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU1/2/1.0}\$ 30 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU01/2/1.0}\$ 30 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU01/2/1.0}\$ 30 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU01/2/1.0}\$ 30 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU01/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.0 12.0 590 \$\text{SOU1/2/1.5}\$ 10 PAIR 1.5 7/0.52 7.0 2.0 1.0 590 \$\text{SOU1/2/1.5}\$ 19 PAIR 1.5 7/0.52 7.0 2.0 1.0 590 \$\text{SOU1/2/1.5}\$ 19 PAIR 1.5 7/0.52 7.0 2.0 2.0 590 \$\text{SOU1/2/1.5}\$ 19 PAIR 1.5 7/0.52 7.0 2.0 2.0 590	SOU30/2/0.5	30 PAIR 0.5	7/0.30	23.7	660
\$\text{SOU02/2/0.75}\$ 2 PAIR 0.75 7/0.37 9.0 135 \$\text{SOU04/2/0.75}\$ 4 PAIR 0.75 7/0.37 11.3 175 \$\text{SOU04/2/0.75}\$ 7 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU10/2/0.75}\$ 10 PAIR 0.75 7/0.37 13.4 270 \$\text{SOU10/2/0.75}\$ 10 PAIR 0.75 7/0.37 16.3 370 \$\text{SOU14/2/0.75}\$ 14 PAIR 0.75 7/0.37 18.4 490 \$\text{SOU14/2/0.75}\$ 14 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU14/2/0.75}\$ 24 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU24/2/0.75}\$ 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75}\$ 30 PAIR 0.75 7/0.37 23.6 800 \$\text{SOU30/2/0.75}\$ 1 QUAD 0.75 7/0.37 7.3 100 \$\text{SOU01/2/1.0}\$ 1 PAIR 1.0 7/0.43 7.9 75 \$\text{SOU02/2/1.0}\$ 2 PAIR 1.0 7/0.43 10.2 130 \$\text{SOU04/2/1.0}\$ 4 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU04/2/1.0}\$ 4 PAIR 1.0 7/0.43 11.9 195 \$\text{SOU07/2/1.0}\$ 7 PAIR 1.0 7/0.43 17.5 450 \$\text{SOU14/2/1.0}\$ 10 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU14/2/1.0}\$ 19 PAIR 1.0 7/0.43 22.4 760 \$\text{SOU14/2/1.0}\$ 19 PAIR 1.0 7/0.43 27.7 1180 \$\text{SOU30/2/1.0}\$ 30 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU30/2/1.0}\$ 30 PAIR 1.0 7/0.43 7.9 120 \$\text{SOU30/2/1.0}\$ 10 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU00/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU00/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.8 90 \$\text{SOU00/2/1.5}\$ 1 PAIR 1.5 7/0.52 7.2 415 \$\text{SOU00/2/1.5}\$ 10 PAIR 1.5 7/0.52 7.2 415 \$\text{SOU01/2/1.5}\$ 10 PAIR 1.5 7/0.52 7.2 415 \$\text{SOU01/2/1.5}\$ 10 PAIR 1.5 7/0.52 7.2 27.2 1010 \$\text{SOU10/2/1.5}\$ 19 PAIR 1.5 7/0.52 7.0 27.2 1010 \$\text{SOU10/2/1.5}\$ 19 PAIR 1.5 7/0.52 7.2 27.2 1010 \$\text{SOU10/2/1.5}\$ 24 PAIR 1.5 7/0.52 7.2 27.2 1010 \$\text{SOU10/2/1.5}\$ 24 PAIR 1.5 7/0.52 7.0 27.2 1010 \$\text{SOU10/2/1.5}\$ 24 PAIR 1.5 7/0.52	SOU01/4/0.5	1 QUAD 0.5	7/0.30	7.1	80
SOU04/2/0.75         4 PAIR 0.75         7/0.37         11.3         175           SOU07/2/0.75         7 PAIR 0.75         7/0.37         13.4         270           SOU10/2/0.75         10 PAIR 0.75         7/0.37         16.3         370           SOU14/2/0.75         14 PAIR 0.75         7/0.37         18.4         490           SOU19/2/0.75         19 PAIR 0.75         7/0.37         21.1         640           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800           SOU30/2/0.75         30 PAIR 0.75         7/0.37         26.1         960           SOU01/2/0.75         30 PAIR 0.75         7/0.37         26.1         960           SOU01/2/1.0         1 PAIR 1.0         7/0.37         7.3         100           SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         11.9         195           SOU10/2/1.0         4 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU19/2/1.0         10 PAIR 1.0         7/0.43         17.5         450 <th< td=""><td>SOU01/2/0.75</td><td>1 PAIR 0.75</td><td>7/0.37</td><td>6.4</td><td>75</td></th<>	SOU01/2/0.75	1 PAIR 0.75	7/0.37	6.4	75
SOU07/2/0.75         7 PAIR 0.75         7/0.37         13.4         270           SOU10/2/0.75         10 PAIR 0.75         7/0.37         16.3         370           SOU14/2/0.75         14 PAIR 0.75         7/0.37         18.4         490           SOU14/2/0.75         14 PAIR 0.75         7/0.37         21.1         640           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800           SOU30/2/0.75         30 PAIR 0.75         7/0.37         26.1         960           SOU01/2/1.0         1 QUAD 0.75         7/0.37         7.3         100           SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         10.2         130           SOU04/2/1.0         4 PAIR 1.0         7/0.43         11.9         195           SOU10/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         10 PAIR 1.0         7/0.43         19.5         590           SOU19/2/1.0         10 PAIR 1.0         7/0.43         25.2         960           SOU	SOU02/2/0.75	2 PAIR 0.75	7/0.37	9.0	135
SOU10/2/0.75         10 PAIR 0.75         7/0.37         16.3         370           SOU14/2/0.75         14 PAIR 0.75         7/0.37         18.4         490           SOU19/2/0.75         19 PAIR 0.75         7/0.37         21.1         640           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800           SOU30/2/0.75         30 PAIR 0.75         7/0.37         26.1         960           SOU01/2/1.0         1 QUAD 0.75         7/0.37         7.3         100           SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         10.2         130           SOU07/2/1.0         2 PAIR 1.0         7/0.43         11.9         195           SOU07/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         14 PAIR 1.0         7/0.43         19.5         590           SOU19/2/1.0         19 PAIR 1.0         7/0.43         22.4         760           SOU24/2/1.0         24 PAIR 1.0         7/0.43         25.2         960           SOU3	SOU04/2/0.75	4 PAIR 0.75	7/0.37	11.3	175
SOU14/2/0.75         14 PAIR 0.75         7/0.37         18.4         490           SOU19/2/0.75         19 PAIR 0.75         7/0.37         21.1         640           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800           SOU30/2/0.75         30 PAIR 0.75         7/0.37         26.1         960           SOU01/2/1.0         1 PAIR 1.0         7/0.37         7.3         100           SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         10.2         130           SOU04/2/1.0         4 PAIR 1.0         7/0.43         11.9         195           SOU10/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         14 PAIR 1.0         7/0.43         19.5         590           SOU14/2/1.0         19 PAIR 1.0         7/0.43         22.4         760           SOU24/2/1.0         24 PAIR 1.0         7/0.43         25.2         960           SOU30/2/1.0         30 PAIR 1.0         7/0.43         27.7         1180           SOU04/	SOU07/2/0.75	7 PAIR 0.75	7/0.37	13.4	270
SOU19/2/0.75         19 PAIR 0.75         7/0.37         21.1         640           SOU24/2/0.75         24 PAIR 0.75         7/0.37         23.6         800           SOU30/2/0.75         30 PAIR 0.75         7/0.37         26.1         960           SOU01/2/1.0         1 QUAD 0.75         7/0.37         7.3         100           SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         10.2         130           SOU04/2/1.0         4 PAIR 1.0         7/0.43         11.9         195           SOU07/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         14 PAIR 1.0         7/0.43         19.5         590           SOU19/2/1.0         19 PAIR 1.0         7/0.43         22.4         760           SOU24/2/1.0         24 PAIR 1.0         7/0.43         25.2         960           SOU30/2/1.0         30 PAIR 1.0         7/0.43         27.7         1180           SOU01/2/1.5         1 PAIR 1.5         7/0.52         7.8         90           SOU01/2/1.	SOU10/2/0.75	10 PAIR 0.75	7/0.37	16.3	370
SOU24/2/0.75       24 PAIR 0.75       7/0.37       23.6       800         SOU30/2/0.75       30 PAIR 0.75       7/0.37       26.1       960         SOU01/4/0.75       1 QUAD 0.75       7/0.37       7.3       100         SOU01/2/1.0       1 PAIR 1.0       7/0.43       7.9       75         SOU02/2/1.0       2 PAIR 1.0       7/0.43       10.2       130         SOU04/2/1.0       4 PAIR 1.0       7/0.43       11.9       195         SOU07/2/1.0       7 PAIR 1.0       7/0.43       14.2       320         SOU10/2/1.0       10 PAIR 1.0       7/0.43       17.5       450         SOU14/2/1.0       14 PAIR 1.0       7/0.43       19.5       590         SOU19/2/1.0       19 PAIR 1.0       7/0.43       19.5       590         SOU24/2/1.0       19 PAIR 1.0       7/0.43       22.4       760         SOU24/2/1.0       24 PAIR 1.0       7/0.43       25.2       960         SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU01/2/1.5       2 PAIR 1.5       7/0.52       14.0       250         SOU04/2/1.	SOU14/2/0.75	14 PAIR 0.75	7/0.37	18.4	490
SOU30/2/0.75         30 PAIR 0.75         7/0.37         26.1         960           SOU01/4/0.75         1 QUAD 0.75         7/0.37         7.3         100           SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         10.2         130           SOU04/2/1.0         4 PAIR 1.0         7/0.43         11.9         195           SOU07/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         14 PAIR 1.0         7/0.43         19.5         590           SOU19/2/1.0         19 PAIR 1.0         7/0.43         22.4         760           SOU24/2/1.0         24 PAIR 1.0         7/0.43         25.2         960           SOU30/2/1.0         30 PAIR 1.0         7/0.43         27.7         1180           SOU01/2/1.0         30 PAIR 1.0         7/0.43         7.9         120           SOU01/2/1.5         1 PAIR 1.5         7/0.52         7.8         90           SOU01/2/1.5         2 PAIR 1.5         7/0.52         14.0         250           SOU04/2/1.5 <td>SOU19/2/0.75</td> <td>19 PAIR 0.75</td> <td>7/0.37</td> <td>21.1</td> <td>640</td>	SOU19/2/0.75	19 PAIR 0.75	7/0.37	21.1	640
SOU01/4/0.75         1 QUAD 0.75         7/0.37         7.3         100           SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         10.2         130           SOU04/2/1.0         4 PAIR 1.0         7/0.43         11.9         195           SOU10/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         14 PAIR 1.0         7/0.43         19.5         590           SOU19/2/1.0         19 PAIR 1.0         7/0.43         22.4         760           SOU24/2/1.0         24 PAIR 1.0         7/0.43         25.2         960           SOU30/2/1.0         30 PAIR 1.0         7/0.43         27.7         1180           SOU30/2/1.0         30 PAIR 1.0         7/0.43         7.9         120           SOU01/2/1.5         1 PAIR 1.5         7/0.52         7.8         90           SOU01/2/1.5         2 PAIR 1.5         7/0.52         12.1         160           SOU04/2/1.5         4 PAIR 1.5         7/0.52         17.2         415           SOU19/2/1.5	SOU24/2/0.75	24 PAIR 0.75	7/0.37	23.6	800
SOU01/2/1.0         1 PAIR 1.0         7/0.43         7.9         75           SOU02/2/1.0         2 PAIR 1.0         7/0.43         10.2         130           SOU04/2/1.0         4 PAIR 1.0         7/0.43         11.9         195           SOU10/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         14 PAIR 1.0         7/0.43         19.5         590           SOU19/2/1.0         19 PAIR 1.0         7/0.43         22.4         760           SOU24/2/1.0         24 PAIR 1.0         7/0.43         25.2         960           SOU30/2/1.0         30 PAIR 1.0         7/0.43         27.7         1180           SOU01/4/1.0         1 QUAD 1.0         7/0.43         7.9         120           SOU01/4/1.0         1 QUAD 1.0         7/0.43         7.9         120           SOU01/2/1.5         1 PAIR 1.5         7/0.52         7.8         90           SOU02/2/1.5         2 PAIR 1.5         7/0.52         12.1         160           SOU04/2/1.5         4 PAIR 1.5         7/0.52         17.2         415           SOU10/2/1.5	SOU30/2/0.75	30 PAIR 0.75	7/0.37	26.1	960
SOU02/2/1.0       2 PAIR 1.0       7/0.43       10.2       130         SOU04/2/1.0       4 PAIR 1.0       7/0.43       11.9       195         SOU07/2/1.0       7 PAIR 1.0       7/0.43       14.2       320         SOU10/2/1.0       10 PAIR 1.0       7/0.43       17.5       450         SOU14/2/1.0       14 PAIR 1.0       7/0.43       19.5       590         SOU19/2/1.0       19 PAIR 1.0       7/0.43       22.4       760         SOU24/2/1.0       24 PAIR 1.0       7/0.43       25.2       960         SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/4/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU19/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU14/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5 <td>SOU01/4/0.75</td> <td>1 QUAD 0.75</td> <td>7/0.37</td> <td>7.3</td> <td>100</td>	SOU01/4/0.75	1 QUAD 0.75	7/0.37	7.3	100
SOU04/2/1.0         4 PAIR 1.0         7/0.43         11.9         195           SOU07/2/1.0         7 PAIR 1.0         7/0.43         14.2         320           SOU10/2/1.0         10 PAIR 1.0         7/0.43         17.5         450           SOU14/2/1.0         14 PAIR 1.0         7/0.43         19.5         590           SOU19/2/1.0         19 PAIR 1.0         7/0.43         22.4         760           SOU24/2/1.0         24 PAIR 1.0         7/0.43         25.2         960           SOU30/2/1.0         30 PAIR 1.0         7/0.43         27.7         1180           SOU01/4/1.0         1 QUAD 1.0         7/0.43         7.9         120           SOU01/2/1.5         1 PAIR 1.5         7/0.52         7.8         90           SOU02/2/1.5         2 PAIR 1.5         7/0.52         12.1         160           SOU04/2/1.5         4 PAIR 1.5         7/0.52         14.0         250           SOU10/2/1.5         7 PAIR 1.5         7/0.52         17.2         415           SOU10/2/1.5         10 PAIR 1.5         7/0.52         21.0         590           SOU14/2/1.5         14 PAIR 1.5         7/0.52         23.6         780           SOU14/2/1.5	SOU01/2/1.0	1 PAIR 1.0	7/0.43	7.9	75
SOU07/2/1.0       7 PAIR 1.0       7/0.43       14.2       320         SOU10/2/1.0       10 PAIR 1.0       7/0.43       17.5       450         SOU14/2/1.0       14 PAIR 1.0       7/0.43       19.5       590         SOU19/2/1.0       19 PAIR 1.0       7/0.43       22.4       760         SOU24/2/1.0       24 PAIR 1.0       7/0.43       25.2       960         SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU10/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU02/2/1.0	2 PAIR 1.0	7/0.43	10.2	130
SOU10/2/1.0       10 PAIR 1.0       7/0.43       17.5       450         SOU14/2/1.0       14 PAIR 1.0       7/0.43       19.5       590         SOU19/2/1.0       19 PAIR 1.0       7/0.43       22.4       760         SOU24/2/1.0       24 PAIR 1.0       7/0.43       25.2       960         SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU04/2/1.0	4 PAIR 1.0	7/0.43	11.9	195
SOU14/2/1.0       14 PAIR 1.0       7/0.43       19.5       590         SOU19/2/1.0       19 PAIR 1.0       7/0.43       22.4       760         SOU24/2/1.0       24 PAIR 1.0       7/0.43       25.2       960         SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU10/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU07/2/1.0	7 PAIR 1.0	7/0.43	14.2	320
SOU19/2/1.0       19 PAIR 1.0       7/0.43       22.4       760         SOU24/2/1.0       24 PAIR 1.0       7/0.43       25.2       960         SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU10/2/1.0	10 PAIR 1.0	7/0.43	17.5	450
SOU24/2/1.0       24 PAIR 1.0       7/0.43       25.2       960         SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU14/2/1.0	14 PAIR 1.0	7/0.43	19.5	590
SOU30/2/1.0       30 PAIR 1.0       7/0.43       27.7       1180         SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU19/2/1.0	19 PAIR 1.0	7/0.43	22.4	760
SOU01/4/1.0       1 QUAD 1.0       7/0.43       7.9       120         SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU24/2/1.0	24 PAIR 1.0	7/0.43	25.2	960
SOU01/2/1.5       1 PAIR 1.5       7/0.52       7.8       90         SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU30/2/1.0	30 PAIR 1.0	7/0.43	27.7	1180
SOU02/2/1.5       2 PAIR 1.5       7/0.52       12.1       160         SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU01/4/1.0	1 QUAD 1.0	7/0.43	7.9	120
SOU04/2/1.5       4 PAIR 1.5       7/0.52       14.0       250         SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU01/2/1.5	1 PAIR 1.5	7/0.52	7.8	90
SOU07/2/1.5       7 PAIR 1.5       7/0.52       17.2       415         SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU02/2/1.5	2 PAIR 1.5	7/0.52	12.1	160
SOU10/2/1.5       10 PAIR 1.5       7/0.52       21.0       590         SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU04/2/1.5	4 PAIR 1.5	7/0.52	14.0	250
SOU14/2/1.5       14 PAIR 1.5       7/0.52       23.6       780         SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU07/2/1.5	7 PAIR 1.5	7/0.52	17.2	415
SOU19/2/1.5       19 PAIR 1.5       7/0.52       27.2       1010         SOU24/2/1.5       24 PAIR 1.5       7/0.52       30.5       1270	SOU10/2/1.5	10 PAIR 1.5	7/0.52	21.0	590
<b>SOU24/2/1.5</b> 24 PAIR 1.5 7/0.52 30.5 1270	SOU14/2/1.5	14 PAIR 1.5	7/0.52	23.6	780
	SOU19/2/1.5	19 PAIR 1.5	7/0.52	27.2	1010
<b>SOU30/2/1.5</b> 30 PAIR 1.5 7/0.52 33.6 1570	SOU24/2/1.5	24 PAIR 1.5	7/0.52	30.5	1270
	SOU30/2/1.5	30 PAIR 1.5	7/0.52	33.6	1570

FIRSTFLEX

### RFOU SERIES

NEK606 RFOU Fixed CBS
Shipboard / Offshore Power Cable
0.6/1kV 90°C



#### **APPLICATIONS:**

**Mud resistant** In accordance with NEK 606, the cables shall have a sheath (SHF MUD) that complies with the requirements in IEC 60092-359 for SHF 2 sheath materials.

**Oil & Gas** For control, lighting and power systems on oil and gas rigs.

**Marine** For fixed wiring installations on oil and gas rigs, shipboard and other marine applications requiring screened cable for EMC.

#### **PRODUCT FEATURES:**

- ► Low smoke halogen free
- Mud resistant to NEK606
- ▶ PVC free
- ▶ Lloyds approved
- ▶ UV stabilised
- ► Flame retardant
- ▶ To be earthed at both ends using EMC compatible glands
- ▶ Heat, oil and chemical resistant (See Technical Section)

#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded (Class 2). **Insulation** Halogen free EPR (Ethylene Propylene Rubber). **Inner Sheath** SHF 2, thermoset dual compound LSHF and oil/mud resistant.

**Screening** Tinned copper braid screen.

**Sheath** SHF 2, thermoset dual compound LSHF and oil/mud resistant.

#### **CHARACTERISTICS:**

**Operating Temperature Range** Fixed -40°C to 90°C.

**Maximum Conductor temperature** 90°C (Current ratings are based on 30°C air temp. See technical section for de-rating factors).

Rated Voltage Uo/U 0.6/1kV.

Max AC Operating Voltage Uo 0.7kV.

Sheath Colour Black.

**Standard Core Colours**Single Core – White.

2 Core – White and Black.

3 Core – White, Black and Red.

4 Core - Off-White, Black, Red and Blue.

**Certification Society Approvals** Lloyds Register of Shipping. **Relevant Standards** NEK606, IEC 60092-353, IEC 60092-351, IEC 60092-359, IEC 60754-1/2, IEC 61034-1, IEC 61034-2, IEC 60228, IEC 60332-3-22, **ROHS** Compliant.

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	Nominal Amps un-enclosed protected from sun @ 30°C fixed installation
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Touching or in ventilated ducts
RFOU1/16	1 x 16	7/1.70	11.2	385	94
RFOU1/25	1 x 25	7/2.13	13.3	573	125
RFOU1/35	1 x 35	7/2.52	14.6	713	155
RFOU1/50	1 x 50	19/1.83	15.9	896	196
RFOU1/70	1 x 70	19/2.17	17.8	1160	248
RFOU1/95	1 x 95	19/2.52	20.1	1484	298
RFOU1/120	1 x 120	37/2.03	21.2	1758	354
RFOU1/150	1 x 150	37/2.27	23.0	2119	409
RFOU1/185	1 x 185	37/2.52	25.5	2558	470
RFOU1/240	1 x 240	61/2.24	28.9	3240	565
RFOU1/300	1 x 300	61/2.50	32.9	4050	650

Product table continued over



### **RFOU SERIES continued**

	No. of Cores	Approx.	Approx.	Approx.	Nominal Amps
Code	x Size	Stranding	Overall Diameter	Weight	un-enclosed protected from sun @ 30°C fixed installation
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Touching or in ventilated ducts
RFOU02/1.5	2 x 1.5	7/0.52	14.4	317	25
RFOU02/2.5	2 x 2.5	19/0.41	15.5	373	33
RFOU02/4.0	2 x 4.0	19/0.52	17.1	460	44
RFOU02/6.0	2 x 6.0	19/0.64	18.3	546	56
RFOU02/10	2 x 10	49/0.51	20.2	724	79
RFOU02/16	2 x 16	49/0.65	22.7	957	106
RFOU03/1.5	3 x 1.5	7/0.52	15.0	349	25
RFOU03/2.5	3 x 2.5	19/0.41	16.1	417	33
RFOU03/4.0	3 x 4.0	19/0.52	17.8	521	44
RFOU03/6.0	3 x 6.0	19/0.64	19.1	627	56
RFOU03/10	3 x 10.0	49/0.51	21.1	857	79
RFOU03/16	3 x 16.0	49/0.65	23.6	1148	106
RFOU03/25	3 x 25.0	84/0.62	27.6	1609	119
RFOU03/35	3 x 35.0	133/0.58	30.9	2079	146
RFOU04/1.5	4 x 1.5	7/0.52	15.9	397	21
RFOU04/2.5	4 x 2.5	19/0.41	17.1	479	29
RFOU04/4.0	4 x 4.0	19/0.52	19.0	616	37
RFOU04/6.0	4 x 6.0	19/0.64	20.9	761	47
RFOU04/10	4 x 10.0	49/0.51	22.5	1009	67
RFOU04/16	4 x 16.0	49/0.65	25.6	1370	89
RFOU04/25	4 x 25.0	84/0.62	29.7	1938	119
RFOU04/35	4 x 35.0	133/0.58	33.3	2520	149
RFOU04/50	4 x 50.0	133/0.69	37.4	3387	187
RFOU04/70	4 x 70.0	189/0.69	42.6	4506	235
RFOU04/95	4 x 95.0	259/0.69	49.0	6042	282
RFOU04/120	4 x 120	336/0.67	52.6	7324	333
RFOU07/1.5	7 x 1.5	7/0.52	18.2	370	15
RFOU12/1.5	12 x 1.5	7/0.52	23.6	545	15
RFOU19/1.5	19 x 1.5	7/0.52	27.0	743	15
RFOU37/1.5	37 x 1.5	7/0.52	31.8	1291	15
RFOU07/2.5	7 x 2.5	19/0.41	19.9	657	20
RFOU12/2.5	12 x 2.5	19/0.41	25.5	1115	20
RFOU19/2.5	19 x 2.5	19/0.41	29.3	1516	20
RFOU27/2.5	27 x 2.5	19/0.41	34.6	2107	20
RFOU37/2.5	37 x 2.5	19/0.41	38.9	2662	20



## MTR SERIES

Standard Performance Flexible Marine Trailer Cable 50V AC / 120V DC 90°C



#### **APPLICATIONS:**

**Marine** Pleasure crafts and other marine applications. These cables are flexible for installation and intermittent flexible use with free movement without tensile stress.

Automotive Trailer wiring.

#### **PRODUCT FEATURES:**

- ► High electric and thermal conductivity
- UV stabilised
- ► Flame retardant
- ▶ Heat, oil and chemical resistant (See Technical Section)

#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

Insulation SPVC.

Sheath SPVC.

#### **CHARACTERISTICS:**

Operating Temperature Range Fixed -20°C to  $90^{\circ}$ C /

Flexing -5°C to 75°C.

**Maximum Conductor temperature** 90°C.

Voltage Rating AC 50V / DC 120V.

Sheath Colour Black (except 3 Core White).

**Core Colour** 

3 Core Cable – White, Yellow, Brown.

5 Core Cable – White, Yellow, Brown, Red, Green.

7 Core Cable – White, Yellow, Brown, Red, Green, Blue, Black.

(Other Core colour combinations by quotation).

Relevant Standards AS/NZS 1125, IEC 60332-1,

Code	Nearest AWG		Approx. Stranding	Nominal Area	Industry Equivalent	AMP Rating at 30°C	Average Sheath Thickness		Resistance	Approx. Overall Diameter	Approx. Weight	
			No. of wires x mm	(mm²)	(mm)		(mm)	(mm)	(m Ω/mt)	(mm)	(Kg/Km)	
MTR516030B	161/2	5	16/0.30	1.13	3.0	10	0.60	0.50	17.30	7.45	99.0	
MTR716030B	161/2	7	16/0.30	1.13	3.0	10	0.80	0.50	38.93	8.60	138.0	



## MST SERIES

High Performance Flexible
Appliance / Marine Wire 0.6/1kV 90°C

#### **APPLICATIONS:**

**Power** Flexible thermal insulated wire suitable for switchboard wiring, motors and transformers.

**Marine** Tinned copper conductors for boat wiring and other marine applications.

**Audio** Amplifiers and audio equipment where oxygen-free copper wire is required.

#### **PRODUCT FEATURES:**

- ► Tinned fine stranded copper conductor
- UV stabilised
- ► Flame retardant
- ▶ Metre marked 0.5mm to 25mm for better length control
- ▶ Oil and chemical resistant (See Technical Section)



#### CONSTRUCTION:

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

Insulation SPVC V-90HT.

#### **CHARACTERISTICS:**

**Operating Temperature Range** Fixed -20°C to 90°C / Flexing 5°C to 75°C.

**Maximum Conductor Temperature** 105°C (Current ratings are based on 30°C air temp. See technical section for de-rating factors).

Rated Voltage Uo/U 0.6/1kV.

**Minimum Bending Radius** Fixed 10 x cable diameter / Flexing 15 x cable diameter

#### **Insulation Colour**

0.5mm² ......Red, White, Blue, Black, Grey, Brown, Pink,
Orange, Green/Yellow, Violet, Yellow.

0.75 - 4.0mm² ......Red, White, Blue, Black, Grey, Brown, Yellow,
Violet, Orange, Green/Yellow, Pink.

6.0 - 10.0mm² ......Red, White, Blue, Black, Green/Yellow.

16.0 - 25.0mm² .....Red, White, Blue, Black, Green/Yellow.

Relevant Standards IEC 60228, IEC 60332-1, AS/NZS 3808,
AS/NZS 3008.1, AS/NZS 3191, AS/NZS 1125, AS/NZS 5000.1,

€ Directive 2006/95/EC, ROHS Compliant.

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	Nominal Amps enclosed protected from sun @ 30°C fixed application	3 Phase Volt Drop @50Hz / MAX. Conductor Temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	In Duct or Cabinet	90°C (Mv/Am)
MST000.50	1 x 0.50	16/0.20	2.5	10	7	86.100
MST000.75	1 x 0.75	24/0.20	2.8	15	10	52.936
MST001.0	1 x 1.0	32/0.20	2.9	17	15	46.800
MST001.5	1 x 1.5	30/0.25	3.4	20	17	30.000
MST002.5	1 x 2.5	50/0.25	4.1	32	23	16.400
MST004	1 x 4.0	56/0.30	4.8	50	31	10.200
MST006	1 x 6.0	84/0.30	5.3	70	39	6.810
MST010	1 x 10.0	80/0.40	6.8	116	52	4.050
MST016	1 x 16.0	128/0.40	8.1	177	70	2.550
MST025	1 x 25.0	200/0.40	10.2	281	89	1.620



## MBS SERIES

Standard Performance Flexible Marine Battery / Starter Cable 50V AC /120V DC 75°C

#### **APPLICATIONS:**

**Marine** Battery and starter cable. These cables are flexible for installation and intermittent flexible use with free movement without tensile stress.

Audio Oxygen free copper for audio applications.

#### **PRODUCT FEATURES:**

- ► High electric and thermal conductivity
- UV stabilised
- ► Flame retardant
- ▶ Heat, oil and chemical resistant (See Technical Section)

#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

**Insulation** Special SPVC.

#### **CHARACTERISTICS:**

**Operating Temperature Range** Fixed -20°C to 90°C / Flexing -5°C to 75°C.

**Maximum Conductor temperature** 90°C.

Voltage Rating AC 50V / DC 120V.

Sheath Colour Red or Black.

Relevant Standards AS/NZS 1125, IEC 60332-1,

Code	Approx. Stranding	Nominal Area	Average Insulation Thickness	Average Sheath Thickness	Max D.C. Resistance at 20°C	Approx. Overall Diameter	Approx. Weight
	No. of wires x mm	(mm²)	(mm)	(mm)	(m Ω/mt)	(mm)	(Kg/Km)
MBS8	112/0.30	7.92	74	0.90	2.36	5.40	89.0
MBS3	364/0.30	25.70	170	1.60	0.72	10.20	289.0
MBS0	700/0.30	49.45	246	1.70	0.38	12.50	526.0



## MFE SERIES

Standard Performance Flexible Marine Figure 8
50V AC/120V DC 75°C

#### **APPLICATIONS:**

**Marine** Pleasure crafts and other marine applications.

These cables are flexible for installation and intermittent flexible use with free movement without tensile stress.

Audio Oxygen free copper for speakers and audio controls.

#### **PRODUCT FEATURES:**

- ► High electric and thermal conductivity
- UV stabilised
- ► Flame retardant
- ▶ Heat, oil and chemical resistant (See Technical Section)

#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

**Insulation** Special SPVC.

#### **CHARACTERISTICS:**

Operating Temperature Range Fixed -20°C to 90°C /

Flexing -5°C to 75°C.

**Maximum Conductor temperature** 90°C.

Voltage Rating AC 50V / DC 120V.

Sheath Colour Red and Red with black trace.

Relevant Standards AS/NZS 1125, IEC 60332-1,

Code	Nearest AWG	Approx. Stranding No. of wires x mm	Nominal Area (mm²)	Industry Equivalent (mm)	AMP Rating at 30°C	Average Insulation Thickness (mm)	Max D.C. Resistance at 20°C (m Ω/mt)	Approx. Overall Diameter (mm)	Approx. Weight (Kg/Km)	
MFE216030	16½	16/0.30	1.13	3.00	16	0.55	17.30	2.45 x 5.20	29.0	
MFE226030	141/2	26/0.30	1.84	4.00	22	0.55	10.65	2.80 x 5.90	43.0	



## MTS SERIES

Standard Performance Flexible Marine Twin Sheath 50V AC /120V DC 90°C



**Marine** Pleasure crafts and other marine applications. These cables are flexible for installation and intermittent flexible use with free movement without tensile stress.

**Audio** Oxygen free copper for speaker wiring applications.

#### **PRODUCT FEATURES:**

- ► Tinned copper conductor
- ► High electric and thermal conductivity
- UV stabilised
- ► Flame retardant
- ▶ Heat, oil and chemical resistant (See Technical Section)

#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

Insulation SPVC.

Sheath SPVC.

#### **CHARACTERISTICS:**

Temperature Range Fixed -20°C to 90°C /

Flexing -5°C to 75°C.

Voltage Rating AC 50V / DC 120V.

Sheath Colour Black, White.

Core Colour Red & Black.

Maximum Conductor temperature 90°C.

Relevant Standards AS/NZS 1125, IEC 60332-1,

Code	Nearest AWG	Approx. Stranding	Nominal Area	Industry Equivalent	AMP Rating at 30°C	Average Sheath Thickness	Average Insulation Thickness	Max D.C. Resistance at 20°C	Approx. Overall Diameter	Approx. Weight
		No. of wires x mm	(mm²)	(mm)		(mm)	(mm)	(m Ω/mt)	(mm)	(Kg/Km)
MTS27032	201/2	7/0.32	0.56	-	10	0.60	0.50	38.93	3.20 x 5.20	27.0
MTS216030	161/2	16/0.30	1.13	3.00	16	0.60	0.60	17.30	3.50 x 5.90	41.0
MTS226030	141/2	26/0.30	1.84	4.00	22	0.60	0.60	10.65	3.90 x 6.70	57.0



## MTSV SERIES

Survey Compliant Flexible Twin Marine Cable 0.6/1kV 90°C

#### **APPLICATIONS:**

**Marine** Suitable for wiring on pleasure craft and commercial vessels that require survey compliant cables.

#### **PRODUCT FEATURES:**

- ► Tinned copper conductor
- UV stabilised
- ► Flame retardant
- ▶ Heat, oil and chemical resistant (See Technical Section)



#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

**Insulation** XLPE.

Sheath PVC ST2.

#### **CHARACTERISTICS:**

Temperature Range Fixed -20°C to 90°C.

Voltage Rating 0.6/1kV.

Minimum Bending Radius Fixed 10 x Cable Diameter.

**Sheath Colour** Black with Blue stripe, or White with Blue stripe.

Core Colour Red & Black.

**Maximum Conductor temperature** 90°C.

Relevant Standards AS/NZS 3004.1&2, IEC 60228,

IEC 60092-360, IEC 60092-350, IEC 60092-353, IEC 60332-3-22,

Code	Size (Core x mm)	Conductor Construction (mm)	Thickness of Insulation (mm)	Thickness of Sheath (mm)	Approx. Overall Diameter (mm)	Approx. Weight (Kg/Km)	Max D.C. Resistance at 20°C (m Ω/mt)
MTSV2/0.75	2 x 0.75	24/0.2	0.8	1.0	4.8 x 7.6	38	26.7
MTSV2/1.0	2 x 1.0	32/0.2	0.8	1.0	5.0 x 8.0	53	20
MTSV2/1.5	2 x 1.5	48/0.2	0.8	1.1	5.4 x 8.6	60	13.7
MTSV2/2.5	2 x 2.5	80/0.2	0.8	1.1	5.8 x 9.4	90	8.21
MTSV2/4.0	2 x 4.0	127/0.2	1.0	1.2	7.0 x 11.6	130	5.09
MTSV2/6.0	2 x 6.0	190/0.2	1.0	1.2	7.9 x 13.4	143	3.39
MTSV2/10	2 x 10	318/0.2	1.0	1.3	9.2 x 15.8	310	1.95
MTSV2/16	2 x 16	504/0.2	1.0	1.4	10.4 x 18.0	403	1.24
MTSV2/25	2 x 25	770/0.2	1.2	1.6	12.7 x 22.2	615	0.795
MTSV2/35	2 x 35	703/0.25	1.2	1.7	14.7 x 26.0	765	0.565



## MTSA SERIES

Survey Compliant Flexible Twin Marine Cable 0.6/1kV 75°C



**Marine** Flexible tinned copper for battery power supplies and winches.

**Automotive** Suitable for use as battery/jumper cables (indoor/outdoor) and power leads for forklifts and field conveyers.

**Telecommunications** Where finely stranded large cross section cables are required for minimal volt drop.

**Audio** Power supply to amplifiers and audio equipment where oxygen free copper wire is required.

#### **PRODUCT FEATURES:**

- ► Tinned copper conductor
- ▶ UV stabilised
- ▶ Flame retardant
- ▶ Heat, oil and chemical resistant (See Technical Section)



#### **CONSTRUCTION:**

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

Insulation SPVC.

Sheath PVC ST2.

#### **CHARACTERISTICS:**

Temperature Range Fixed -20°C to 75°C.

Voltage Rating 0.6/1kV.

Minimum Bending Radius Fixed 10 x Cable Diameter.

Sheath Colour Black with Blue stripe, or White with Blue stripe.

Core Colour Red & Black.

**Maximum Conductor temperature** 75°C.

Relevant Standards IEC 60228, AS/NZS 3000,

Code	Size (Core x mm)	Conductor Construction (mm)	Thickness of Insulation (mm)	Thickness of Sheath (mm)	Approx. Overall Diameter (mm)	Approx. Weight (Kg/Km)	Max D.C. Resistance at 20°C (m Ω/mt)
MTSA2/0.75	2 x 0.75	24/0.2	0.8	1.0	4.8 x 7.6	38	26.7
MTSA2/1.0	2 x 1.0	32/0.2	0.8	1.0	5.0 x 8.0	53	20
MTSA2/1.5	2 x 1.5	48/0.2	0.8	1.1	5.4 x 8.6	60	13.7
MTSA2/2.5	2 x 2.5	80/0.2	0.8	1.1	5.8 x 9.4	90	8.21
MTSA2/4.0	2 x 4.0	127/0.2	1.0	1.2	7.0 x 11.6	130	5.09
MTSA2/6.0	2 x 6.0	190/0.2	1.0	1.2	7.9 x 13.4	143	3.39
MTSA2/10	2 x 10	318/0.2	1.0	1.3	9.2 x 15.8	310	1.95
MTSA2/16	2 x 16	504/0.2	1.0	1.4	10.4 x 18.0	403	1.24
MTSA2/25	2 x 25	770/0.2	1.2	1.6	12.7 x 22.2	615	0.795
MTSA2/35	2 x 35	703/0.25	1.2	1.7	14.7 x 26.0	765	0.565



### FTM SERIES

## High Performance Flexible Twin Marine Cable 300/500V 75°C



**Marine** Suitable for wiring on pleasure craft and other marine applications requiring flexible tinned copper conductors.

**Lighting** Used for festoon and garden lighting where a flexible cable is required.

**Audio** Amplifiers and audio equipment where oxygen free copper wire is required.

#### **PRODUCT FEATURES:**

- ► Tinned fine stranded copper conductor
- UV stabilised
- ► Flame retardant
- ► Heat, oil and chemical resistant (See Technical Section)

### CONSTRUCTION:

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

**Insulation** Special SPVC V-75.

Sheath SPVC 4V-75.

#### **CHARACTERISTICS:**

Operating Temperature Range Fixed -20°C to 75°C /

Flexing -5°C to 75°C.

**Maximum Conductor Temperature** 75°C (Current ratings are based on 30°C air temp. See technical section for de-rating factors).

Rated Voltage Uo/U 300/500v.

Max AC Operating Voltage Uo 318v.

Minimum Bending Radius Fixed 10 x cable diameter /

Flexing 15 x cable diameter.

Sheath Colour Black.

Standard Core Colours Red, Black.

Relevant Standards AS/NZS 1125, AS/NZS 3808, IEC 60332-1,

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	Nominal Amps un-enclosed protected from sun @ 30°C fixed application		1 Phase Volt Drop @50Hz / MAX. Conductor Temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	Spaced 8	Touching 8	75°C (Mv/Am)
FTM2/0.75	2 x 0.75	24/0.20	4.2h x 6.5w	38	14	12	63.200
FTM2/1.5	2 x 1.5	48/0.20	4.6h x 7.2w	60	23	21	32.300
FTM2/2.5	2 x 2.5	80/0.20	5.4h x 8.8w	90	30	29	19.400
FTM2/4.0	2 x 4.0	127/0.20	6.2h x 10.5w	130	40	38	12.000



### TW-T SERIES

High Performance Flexible Twin
Marine Cable 0.6/1kV 90°C



**Marine** Flexible tinned copper for battery power supplies and winches.

**Automotive** Suitable for use as battery/jumper cables (indoor/outdoor) and power leads for forklifts and field conveyers.

**Telecommunications** Where finely stranded large cross section cables are required for minimal volt drop.

**Audio** Power supply to amplifiers and audio equipment where oxygen free copper wire is required.

#### PRODUCT FEATURES:

- ► Tinned fine stranded copper conductor
- UV stabilised
- ► Flame retardant
- ► Heat, oil and chemical resistant (See Technical Section)



#### CONSTRUCTION:

**Conductor** Annealed tinned copper stranded high flexibility (Class 5).

**Insulation SPVC.** 

**Sheath** Transparent SPVC.

#### **CHARACTERISTICS:**

**Operating Temperature Range** Fixed -20°C to 90°C / Flexing -5°C to 75°C.

**Maximum Conductor Temperature** 90°C (Current ratings are based on 30°C air temp. See technical section for de-rating factors).

Rated Voltage 0.6/1kV.

Sheath Colour Clear sheath.

Core Colour Red and Black.

**Relevant Standards** DIN VDE 0250, DIN VDE 472, IEC 60332-1, AS/NZS 1125, *ROHS* Compliant.

Code	No. of Cores x Size	Approx. Stranding	Approx. Overall Diameter	Approx. Weight	Max D.C. Resistance at 20°C	Nominal Amps un-enclosed protected from sun @ 30°C fixed installation 1 Phase		1 Phase Volt Drop @50Hz / MAX. Conductor Temp:
	(mm²)	No. of wires x mm	(mm)	(Kg/Km)	(m Ω/mt)	Spaced 8	Touching 8	75°C (Mv/Am)
TW02.5T	2 x 2.5	80/0.20	5.5 x 12.0	90.0	7.410	30	29	19.400
TW04T	2 x 4.0	128/0.20	6.0 x 13.0	130.0	4.950	40	38	12.000
TW06T	2 x 6.0	192/0.20	6.5 x 14.0	220.0	3.300	51	48	7.496
TW10T	2 x 10.0	322/0.20	8.0 x 17.0	340.0	1.910	72	67	4.458
TW16T	2 x 16.0	511/0.20	9.80 x 19.60	453.0	1.210	95	89	2.807
TW25T	2 x 25.0	784/0.20	11.30 x 22.60	659.0	0.780	125	119	1.778
TW35T	2 x 35.0	714/0.25	12.80 x 25.60	894.0	0.550	156	146	1.282

Duty Cycle Current Rating (Amps) Welding, Automotive and Battery Charging (% of a 5 minute period @ 30°C)										
Size	100%	60%	30%	25%						
2 x 4.0	42	54	77	82						
2 x 6.0	62	80	113	120						
2 x 10.0	100	107	126	134						
2 x 16.0	139	152	187	200						
2 x 25.0	183	209	265	285						
2 x 35.0	227	264	243	370						

