# 船用网线 Marine Ethernet cable

HF Flame Oil Cold UV Fire

## CAT 5E AFR S/FTP 4PR 23AWG/1 SHF2 (TCWB)



## 应用 Application

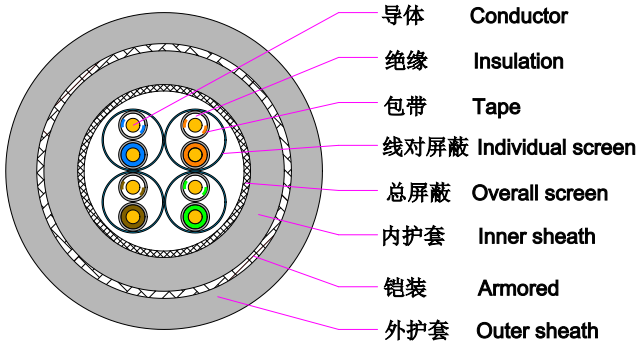
符合 IEC 61156-5 标准的高性能海上 LAN 电缆,带宽高达 100 MHz。

High performance offshore LAN cable compliant with IEC 61156-5 category 5E standards bandwidths up to 100 MHz.

铜导体，发泡 PE 绝缘，耐火云母带，铝箔对屏蔽，镀锡铜编织总屏蔽，SHF1 内护套，镀锡铜丝铠装，SHF2 外护套。

BC conductor, Foam PE insulation, Fire-resistant Mica tape, Foil screened pairs with an overall tinned copper braid, SHF1 inner sheath, Tinned copper wire armored , SHF2 Outer sheath.

## 结构 Construction




| | | |
|---|---|---|
| 导体 Conductor | 单根铜丝（23AWG/1） | Solid Bare copper wire（23AWG/1） |
| 绝缘 Insulation | 发泡 PE<br>颜色： 1、白/蓝，蓝 2、白/橙，橙<br>3、白/绿，绿 4、白/棕，棕 | Foam PE<br>Color：1、White/Blue，Blue 2、White/Orange，Orange<br>3、White/Green，Green 4、White/Brown，Brown |
| 包带 Tape | 耐火云母带 | Fire-resistant Mica tape |
| 线对屏蔽 Individual screen | 铝箔 | AL/Mylar |
| 总屏蔽 Overall screen | 镀锡铜编织，覆盖率≥40% | Tinned copper braiding, coverage≥40% |
| 内护套 Inner Sheath | SHF1 | SHF1 |
| 铠装 Armored | 镀锡铜丝铠装，覆盖率≥90% | Tinned copper wire braiding, coverage≥90% |
| 外护套 Outer Sheath | SHF2<br>颜色：灰色或定制<br>OD：12.5 ± 0.8mm | SHF2<br>Color ： Grey or as customer's request<br>OD：12.5 ± 0.8mm |
| 印字 Marking | Hysin□MARINE□Cable□CAT5E□AFR□S/FTP□4PR□23AWG/1□SHF2□TCWB□IEC60331-23□IEC60332-3-22□****m□xxxxxx□WW/YY<br>注：□ 表示空格；****m 表示计米；xxxxxx 表示批号;WW/YY 表示周数/年份<br>Note：□ means blank；****m means meters；xxxxxx means batch number；WW/YY means week/year | |

## 电气性能 Electrical Characteristics（20℃）

| | | |
|---|---|---|
| 导体直流电阻 | Conductor DC resistance | ≤95 Ω/km |
| 电阻不平衡 | DC Resistance Unbalance | ≤2%（within a pair），≤5%（between pairs） |
| 特性阻抗 | Characteristic impedance | 100±10 Ω@100MHz |
| 介电强度 | Dielectric Strength | DC 1kV for 1min（conductor to conductor, conductor to screen） |
| 绝缘电阻 | Insulation Resistance | ≥5000MΩ.km（IEC 61156-5） |
| 电容不平衡 | Capacitance Unbalance（pair to ground） | ≤160pF/100m at 1kHz(IEC 61156-5) |
| 传输性能 | Transmission performance | IEC 61156-5 |

| Frequency<br>频率<br>MHz | ATT<br>dB/100m<br>Max. 最大 | RL<br>dB<br>Min.最小 | NEXT<br>dB<br>Min.最小 | PSNEXT<br>dB<br>Min.最小 | ELFEXT<br>dB<br>Min.最小 | PSELFEXT<br>dB<br>Min.最小 |
|---|---|---|---|---|---|---|
| 4 | 4.08 | 23.0 | 56.3 | 53.3 | 52.0 | 49.0 |
| 8 | 5.78 | 24.5 | 51.8 | 48.8 | 45.9 | 42.9 |
| 10 | 6.48 | 25.0 | 50.3 | 47.3 | 44.0 | 41.0 |
| 16 | 8.26 | 25.0 | 47.2 | 44.2 | 39.9 | 36.9 |
| 20 | 9.28 | 25.0 | 45.8 | 42.8 | 38.0 | 35.0 |
| 25 | 10.43 | 24.3 | 44.3 | 41.3 | 36.0 | 33.0 |
| 31.25 | 11.73 | 23.6 | 42.9 | 39.9 | 34.1 | 31.1 |
| 62.5 | 17.00 | 21.5 | 38.4 | 35.4 | 28.1 | 25.1 |
| 100 | 21.98 | 20.1 | 35.3 | 32.3 | 24.0 | 21.0 |

## 其他性能 Other Characteristics

| | | |
|---|---|---|
| 工作温度 | Operating temperature | -40℃ to 90℃ |
| 安装温度 | Installation temperature | -20℃ to 60℃ |
| 卤酸气体 | Acid Gas Release Mounts | ≤5mg/g (IEC 60754-1) |
| 燃烧气体 PH 值 | Burning Occur Gas Acidity | PH≥4.3 (IEC 60754-2) |
| 燃烧气体导电率 | Burning Occur Gas conductivity | <10 μS/mm (IEC 60754-2) |
| 烟密度 | Smoke density | ≥60%（IEC 61034-2） |
| 阻燃性 | Flame resistance | IEC 60332-3-22, IEC 60332-1-2 |
| 耐火性 | Fire resistance | IEC 60331-23 |
| 耐油 | Oil resistance (SHF2) | IRM902, 100℃×24H |
| 抗紫外线 | UV resistance | UL1581 |
| 护套材料性能 | The jacket material performance | IEC 60092-360 |
| 最小弯曲半径 | Min.Bending radius | 15xOD(OD=cable diameter) |
| 重量 | Weight | 200±10 kg/km |

This cable meets RoHS requirements.

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