

# 铜包铝线 (CCAW) Copper-Clad Aluminum Wires

## 高张力铜包铝线 (HCCAW) High-Tension Copper-Clad Aluminum Wires



铜包铝漆包线是采用了铝·铝合金为主材的复合材料的漆包线。是一种兼有铝的轻的特性，铜的良好焊接特性、抗腐蚀性的轻型复合材料。

The enameled copper-clad aluminum wire has a composite conduction made of aluminum or aluminum alloy clad with copper. It possesses lightness in weight as aluminum as well as solderability and corrosion resistance of copper.

### 特长 FEATURES

- ① 最适合于减轻线圈重量  
Helps reduce the weight of coil
- ② 铜的包覆率可选 10、15% 等  
The ratio of copper cladding can be selected among 10, 15% or the like
- ③ 导体的最外层为铜，所以具有和铜线一样的焊接性能  
The copper cladding gives the wire the same degree of solderability as that of copper

### ■ 用途 Applications

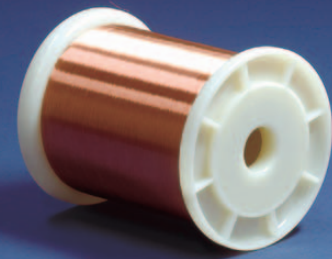
VCM线圈、光学拾波线圈、空心线圈、音圈  
VCM coils, Optical pickup coils, Empty core coils, Voice coils

# 铜包铝线 (CCAW)

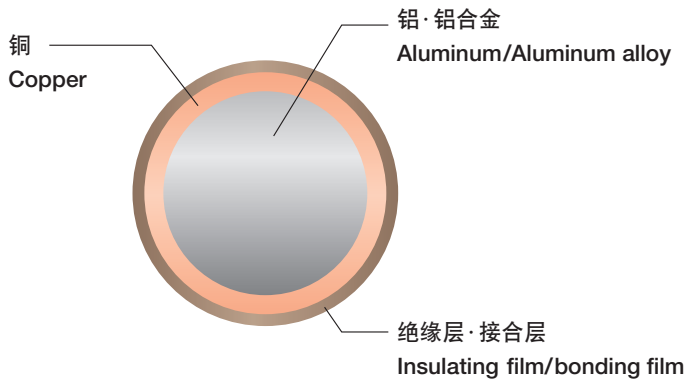
## Copper-Clad Aluminum Wires

# 高张力铜包铝线 (HCCAW)

## High-Tension Copper-Clad Aluminum Wires



### 结构 CONSTRUCTION



标准型 (铜包覆率 15%)

Standard type (15% copper cladding)

- CCAW (Copper-Clad Aluminum Wire) 铜包铝线
- HCCAW (High-Tension Copper-Clad Aluminum Wire) 高张力铜包铝线

### 特性 Characteristics

| 特性项目<br>Items                                 | 铜线<br>Cooper Wire      | CCAW                   | HCCAW                  | 铝线<br>Aluminum Wire    |
|---|------------------------|------------------------|------------------------|------------------------|
| 铜面积比 (%)<br>Ratio of Sectional Area Copper    | 100                    | 15                     | 15                     | 0                      |
| 比重<br>Specific Gravity                        | 8.89                   | 3.63                   | 3.63                   | 2.70                   |
| 导电率 (% IACS)<br>Electrical Conductivity       | 100                    | 68                     | 64                     | 62                     |
| 比电阻 (Ω·m)<br>Specific Resistance              | $1.724 \times 10^{-8}$ | $2.535 \times 10^{-8}$ | $2.694 \times 10^{-8}$ | $2.781 \times 10^{-8}$ |
| 抗拉强度 (N/mm <sup>2</sup> )<br>Tensile Strength | 215 ~ 264              | 98 ~ 137               | 147 ~ 196              | 68 ~ 107               |
| 伸长率 (%)<br>Elongation                         | 20 or over             | 10 or over             | 15 or over             | 8 or over              |

### 型号说明 Product name

2 - PE LOCKCCA W

(A) (B) (C)

- (A) 被覆层厚度的 JIS 规格 (1 类、2 类、3 类)
- (B) 绝缘层的种类 (C) 接合层的种类
- (A) JIS standard of film thickness (class 1, 2, 3)
- (B) Type of insulating film (C) Type of bonding film

### 制造范围 Range of manufacture

| 标识号<br>Code | 绝缘层<br>Insulating Film    | 接合层<br>Bonding Film            | 制造范围 (mm)<br>Range of Manufacture |
|-------------|---------------------------|--------------------------------|-----------------------------------|
| CCA W       | UE<br>SF.B<br>PE<br>SF.EI | MZW<br>LOCK<br>LOCK Y1, Y3, Y5 | 0.05 ~ 0.40                       |
| HCCAW       | UE<br>SF.B<br>PE<br>SF.EI | MZW<br>LOCK<br>LOCK Y1, Y3, Y5 | 0.15 ~ 0.40                       |

| 特性项目<br>Items           | 铜线<br>Cooper Wire | CCAW | HCCAW | 铝线<br>Aluminum Wire |
|-------------------------|-------------------|------|-------|---------------------|
| 绕线性<br>Windability      | ◎                 | ○    | ◎     | ○                   |
| 重量<br>Weight            | △                 | ○    | ○     | ◎                   |
| 焊接性能<br>Solderability   | ◎                 | ◎    | ◎     | △                   |
| 直流电阻<br>D.C. Resistance | ◎                 | ○    | ○     | ○                   |

◎ : 优良 ○ : 良好 △ : 普通  
◎ : Excellent ○ : Good △ : Inferior

#### ● 技术相关询问处

### 古河电磁线株式会社

白根技术部 日本国新潟县新潟市南区上八枚 840-1 邮政编码 950-1431  
电话 : +81-25-373-1101 传真 : +81-25-373-1106

三重技术部 日本国三重县龟山市能登野町 20-16 邮政编码 519-0292  
电话 : +81-595-85-2072 传真 : +81-595-85-1310

开发部 日本国神奈川县平冢市东八幡 5-1-9 邮政编码 254-0016  
电话 : +81-463-21-8233 传真 : +81-463-21-8244

### 古河电气工业株式会社

总公司 日本国东京都千代田区丸之内 2 丁目 2 番 3 号 (丸之内仲通大厦) 邮政编码 100-8322  
电话 : +81-3-3286-3001 传真 : +81-3-3286-3919

#### ● For Technological inquires please contact

### FURUKAWA MAGNET WIRE CO., LTD.

Shirone Technical Group, Technical Department  
840-1, Kamihachimai, Minami-ku, Niigata-shi, Niigata Pref., 950-1431, Japan  
TEL. +81-25-373-1101 FAX. +81-25-373-1106

Mie Technical Group, Technical Department  
20-16, Nobono-cho, Kameyama-shi, Mie Pref., 519-0292, Japan  
TEL. +81-595-85-2072 FAX. +81-595-85-1310

Development Group, Technical Department  
5-1-9, Higashi-yawata, Hiratsuka-shi, Kanagawa Pref., 254-0016, Japan  
TEL. +81-463-21-8233 FAX. +81-463-21-8244

### FURUKAWA ELECTRIC CO., LTD.

Head Office 2-3, Marunouchi 2-chome, Chiyoda-ku 100-8322, Japan  
TEL. +81-3-3286-3144 FAX. +81-3-3286-3960

The details of this brochure are subject to change without notice. It should be noted that this brochure does not contain specifications for products, nor does its description guarantee the performance of products.

本手册记载的内容可无通知进行变更。使用的数据非规格标准，不保证产品性能。

This brochure is printed using environmentally friendly paper and ink. 本手册使用对环境无害的纸张、油墨进行制作。

#### Export Control Regulations

The products and/or technical information presented in this publication may be subject to the application of the Foreign Exchange and Foreign Trade Act and other related laws and regulations in Japan.

In addition, the Export Administration Regulations (EAR) of the United States may be applicable.

In cases where exporting or reexporting the products and/or technical information presented in this publication, customers are requested to follow the necessary procedures at their own responsibility and cost.

Please contact the Ministry of Economy, Trade and Industry of Japan or the Department of Commerce of the United States for details about procedures.

#### 关于出口管理限制

本书记载的产品、技术信息，在日本可适用《外汇和外贸法及相关法令》。

此外，也可适用美国出口管理条例 (EAR: Export Administration Regulations)。

本书记载的产品、技术信息的出口及再出口，由客户负责办理必要手续并承担费用。

具体手续请咨询日本的经济产业省或美国商务部。