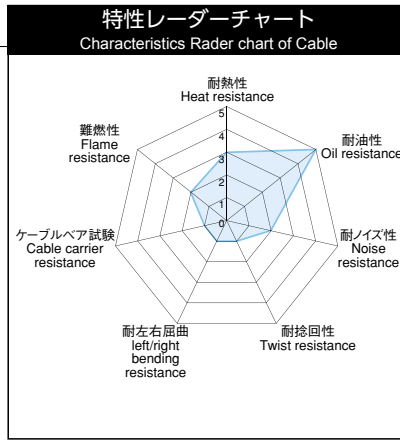


KQC-16

クラモ電子機器配線用エコケーブル
KURAMO Electronic Equipment Connection Ecology Cable
UL AWM 21356



用途 / Use

- 電気機器への配線
Wiring to electrical equipment
- 油環境下での配線
Wiring in oil environment

特長 / Features

- UL・cUL 認証ケーブル
Cables designed to UL・cUL standards
- ノンハロゲン
Non-halogen
- 耐油・耐熱性 (80℃)
Oil resistance, heat resistance (80℃)
- 耐クーラント性
Water-soluble cutting oil resistance

認証 / Approvals



使用温度範囲 / Temperature range

■ 固定時 / Fixed : -50 ~ 80℃*

* -20℃以下でご使用の際は、衝撃・屈曲・振動等の外的力が加わらないようにしてください。
If you use it in temperature less than -20℃, you should be careful about shocks, flexure, vibration and so on.

曲げ半径 / Bending radius

■ 固定時：ケーブル外径の4倍以上推奨
Fixed : 4 times or more of the cable diameter

RoHS 指令 / RoHS Directive

■ 適合 / Conformity

テクニカルデータ / Technical data

| ケーブルタイプ / Cable designation | UL・cUL | |
|-----------------------------|------------------|------------------|
| | Style 21356 | AWM |
| 適用サイズ / Adaptation size | 全サイズ All Size | |
| 定格電圧 / Voltage rating | 300V | |
| 定格温度 / Temperature rating | 80℃ | |
| 試験電圧 / Test voltage | AC 2000V・1min | |
| 難燃性 / Flame resistance | Horizontal | FT2 |
| 適用規格 / Adaptation standard | UL 758 | CSA C22.2 No.210 |

▲ KQC-16 は電気用品安全法が適用されませんので、信号及び通信回路などの弱電流回路にご使用下さい。
KQC-16 are excluded to "Electrical Appliance and Material Safety Law", for this reason, those cable should be used for cable connection to signal and communication circuits and other weak current electrical circuits JAPAN.

構造概略 / Construction

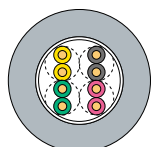
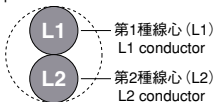
| 項目 / Item | KQC-16 | | |
|---------------------------|---|----------------------------|----------------------------|
| | 0.2mm ² (24AWG) | 0.3mm ² (23AWG) | 0.5mm ² (20AWG) |
| 導体 / Conductor | 軟銅より線 Strands of wire composed of annealed copper | | |
| 絶縁体 / Insulation | ポリエチレン / PE | | |
| 対より / conductor stranding | 線心を対より / Twisted pair | | |
| より合わせ / Pair strand | 対より線心を円形により合わせ / Strands of twisted pair in circular form | | |
| テープ / Tape | テープを重ね巻き / Tape wrap around cores | | |
| シース / Sheath | 難燃ウレタンエラストマー (黒色) / Urethane resin (Black) | | |

線心識別 / Conductors identification

| 対番号 / Pair No. | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | |
|--|-------------------------|------------------------|-------------------------|--------------------------|-------------------------|--------------------------|--------------------------|-------------------------|-------------------------|------------------------|-------------------------|-----------------------|-----------------------|-----------------------|--------------------------|-------------------------|--------------------------|-------------------------|-------------------------|-------------------------|------------------------|------------------------|
| 線心番号 / Conductor No. | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 |
| 絶縁体色 / 識別ライン色 Insulation Color Identification line Color | 黒 / 黒 Black / Black | 黒 / 白 Black / White | 赤 / 赤 Red / Red | 赤 / 白 Red / White | 緑 / 緑 Green / Green | 緑 / 白 Green / White | 黄 / 黄 Yellow / Yellow | 黄 / 白 Yellow / White | 茶 / 茶 Brown / Brown | 茶 / 白 Brown / White | 青 / 青 Blue / Blue | 青 / 白 Blue / White | 灰 / 灰 Gray / Gray | 灰 / 白 Gray / White | 橙 / 橙 Orange / Orange | 橙 / 白 Orange / White | 紫 / 紫 Purple / Purple | 紫 / 白 Purple / White | 白 / 白 White / White | 白 / 黒 White / Black | 緑 / 黒 Green / Black | 緑 / 赤 Green / Red |
| 対番号 / Pair No. | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | | 18 | | 19 | | 20 | | 21 | | 22 | |
| 線心番号 / Conductor No. | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 |
| 絶縁体色 / 識別ライン色 Insulation Color Identification line Color | 黄 / 黒 Yellow / Black | 黄 / 赤 Yellow / Red | 茶 / 黒 Brown / Black | 茶 / 赤 Brown / Red | 青 / 黒 Blue / Black | 青 / 赤 Blue / Red | 灰 / 黒 Gray / Black | 灰 / 赤 Gray / Red | 橙 / 黒 Orange / Black | 橙 / 赤 Orange / Red | 紫 / 黒 Purple / Black | 紫 / 赤 Purple / Red | 赤 / 黒 Red / Black | 赤 / 緑 Red / Green | 黒 / 緑 Black / Green | 黒 / 黄 Black / Yellow | 白 / 緑 White / Green | 白 / 黄 White / Yellow | 茶 / 緑 Brown / Green | 茶 / 黄 Brown / Yellow | 青 / 緑 Blue / Green | 青 / 黄 Blue / Yellow |
| 対番号 / Pair No. | 23 | | 24 | | 25 | | 26 | | 27 | | 28 | | 29 | | 30 | | 31 | | 32 | | | |
| 線心番号 / Conductor No. | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | L1 | L2 | | |
| 絶縁体色 / 識別ライン色 Insulation Color Identification line Color | 灰 / 緑 Gray / Green | 灰 / 黄 Gray / Yellow | 橙 / 緑 Orange / Green | 橙 / 黄 Orange / Yellow | 紫 / 緑 Purple / Green | 紫 / 黄 Purple / Yellow | 黒 / 黒 Black / Black | 黒 / 赤 Black / Red | 黄 / 緑 Yellow / Green | 黄 / 赤 Yellow / Red | 茶 / 緑 Brown / Green | 茶 / 赤 Brown / Red | 青 / 緑 Blue / Green | 青 / 赤 Blue / Red | 灰 / 緑 Gray / Green | 灰 / 赤 Gray / Red | 橙 / 緑 Orange / Green | 橙 / 赤 Orange / Red | 紫 / 緑 Purple / Green | 紫 / 赤 Purple / Red | | |

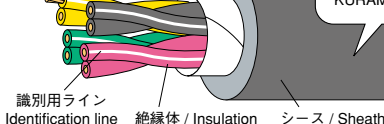
例示 / Example : 8 (4P) × 0.3mm² (23AWG)

対より線心
pair conductor



導体 / Conductor

テープ / Tape



KQC-16 KURAMO ハロゲンフリー (耐油 耐熱) 0.3mm² LF
KURAMO E162205-K AWM STYLE 21356 I A 80C 300V FT2 23AWG

■ 構造表 / Construction table

| 導体 / Conductor | | 絶縁 / Insulation | | 心数 Number of conductors | 在庫* Stocks | シース外径 (約mm) Sheath diameter (Approx.mm) | 概算重量 Approx.weight (kg / km) | 電気特性 / Electrical characteristics | | |
|---------------------------------------|--|----------------------------------|--------------------------------|----------------------------|---------------|--|---------------------------------|--|--|--|
| 公称断面積 Nominal cross sectional area | 外径 (約mm) Diameter (Approx.mm) (Construction) | 外径 (約mm) Diameter (Approx.mm) | 許容電流 Allowable ampacity (A) | | | | | 導体抵抗 Conductor resistance 20°C (Ω / km) | 絶縁抵抗 Insulation resistance (M Ω km) | |
| 0.2mm ² <24AWG> | 0.6 <7/0.20> | 1.1 | 2 (1P) | | 4.0 | 18 | 5 | 87.6 以下 (Max 87.6) | 50 以上 (Min 50) | |
| | | | 3 | | 4.1 | 21 | 4 | | | |
| | | | 4 (2P) | | 5.4 | 19 | 4 | | | |
| | | | 5 (2P+1) | | 5.5 | 30 | 4 | | | |
| | | | 6 (3P) | | 5.6 | 35 | 4 | | | |
| | | | 7 (3P+1) | | 5.7 | 40 | 3 | | | |
| | | | 8 (4P) | | 6.1 | 45 | 3 | | | |
| | | | 10 (5P) | | 6.6 | 50 | 3 | | | |
| | | | 12 (6P) | | 7.2 | 60 | 3 | | | |
| | | | 14 (7P) | | 7.4 | 65 | 3 | | | |
| | | | 15 (7P+1) | | 7.5 | 70 | 3 | | | |
| | | | 16 (8P) | | 7.9 | 75 | 3 | | | |
| | | | 20 (10P) | | 8.8 | 85 | 2 | | | |
| | | | 24 (12P) | | 8.9 | 100 | 2 | | | |
| | | | 30 (15P) | | 9.9 | 120 | 2 | | | |
| | | | 36 (18P) | | 11.0 | 145 | 2 | | | |
| | | | 40 (20P) | | 11.5 | 155 | 2 | | | |
| 50 (25P) | | 12.5 | 190 | 2 | | | | | | |
| 60 (30P) | | 13.5 | 215 | 2 | | | | | | |
| 64 (32P) | | 13.5 | 220 | 2 | | | | | | |
| 0.3mm ² <23AWG> | 0.7 <12/0.18> | 1.3 | 2 (1P) | | 4.4 | 22 | 7 | 69.2 以下 (Max 69.2) | 50 以上 (Min 50) | |
| | | | 3 | | 4.5 | 30 | 6 | | | |
| | | | 4 (2P) | | 5.7 | 35 | 6 | | | |
| | | | 5 (2P+1) | | 5.9 | 40 | 5 | | | |
| | | | 6 (3P) | | 6.6 | 50 | 5 | | | |
| | | | 7 (3P+1) | | 6.7 | 55 | 5 | | | |
| | | | 8 (4P) | | 7.3 | 60 | 5 | | | |
| | | | 10 (5P) | | 8.0 | 70 | 4 | | | |
| | | | 12 (6P) | | 8.8 | 85 | 4 | | | |
| | | | 14 (7P) | | 9.0 | 90 | 4 | | | |
| | | | 15 (7P+1) | | 9.1 | 95 | 4 | | | |
| | | | 16 (8P) | | 9.7 | 105 | 4 | | | |
| | | | 20 (10P) | | 11.0 | 135 | 4 | | | |
| | | | 24 (12P) | | 11.5 | 150 | 3 | | | |
| | | | 30 (15P) | | 12.5 | 170 | 3 | | | |
| | | | 36 (18P) | | 13.5 | 205 | 3 | | | |
| | | | 40 (20P) | | 14.0 | 220 | 3 | | | |
| 50 (25P) | | 16.0 | 270 | 3 | | | | | | |
| 60 (30P) | | 17.0 | 310 | 2 | | | | | | |
| 64 (32P) | | 17.5 | 325 | 2 | | | | | | |
| 0.5mm ² <20AWG> | 0.95 <22/0.18> | 1.7 | 2 (1P) | | 5.1 | 31 | 10 | 34.6 以下 (Max 34.6) | 50 以上 (Min 50) | |
| | | | 3 | | 5.2 | 45 | 9 | | | |
| | | | 4 (2P) | | 6.7 | 50 | 8 | | | |
| | | | 5 (2P+1) | | 6.8 | 60 | 7 | | | |
| | | | 6 (3P) | | 7.2 | 65 | 7 | | | |
| | | | 7 (3P+1) | | 7.3 | 75 | 7 | | | |
| | | | 8 (4P) | | 8.0 | 85 | 6 | | | |
| | | | 10 (5P) | | 8.7 | 100 | 6 | | | |
| | | | 12 (6P) | | 9.7 | 120 | 6 | | | |
| | | | 14 (7P) | | 10.0 | 130 | 5 | | | |
| | | | 15 (7P+1) | | 9.6 | 135 | 5 | | | |
| | | | 16 (8P) | | 11.0 | 150 | 5 | | | |
| | | | 20 (10P) | | 12.5 | 180 | 5 | | | |
| | | | 24 (12P) | | 12.5 | 200 | 5 | | | |
| | | | 30 (15P) | | 13.5 | 250 | 4 | | | |
| | | | 36 (18P) | | 15.0 | 300 | 4 | | | |
| | | | 40 (20P) | | 16.0 | 320 | 4 | | | |
| 50 (25P) | | 18.0 | 400 | 4 | | | | | | |
| 60 (30P) | | 18.0 | 460 | 3 | | | | | | |
| 64 (32P) | | 18.0 | 495 | 3 | | | | | | |

* KQC-16 は、全サイズ受注生産品です。 / KQC-16 are custom order production.

■ 許容電流について / Allowable ampacity

- 許容電流値は、周囲温度 30°C、空中一条敷設時の計算値を示し、保証値ではありません。
Allowable ampacity (A) for cable is based on calculation under aerial one-cable and temperature at 30°C, not representing a guaranteed value.
- 周囲温度 30°C 以上の場合には、下表の電流減少係数を許容電流値に乗じて下さい。
Allowable ampacity cable at ambient temperature above 30°C is to be determined by multiplying the current value by the appropriate current reduction factor in the following table1.
- 許容電流の値は、JCS0168 により算出した値であって、保証値ではありません。
The allowable ampacity for cable are the calculated by JCS0168, but not guaranteed.

JCS0168…日本電線工業会規格 “33kV 以下電力ケーブルの許容電流計算”
“Calculation of the current rating of power cables for rated voltage up to and including 33kV”

■ 表 電流減少係数 / Table1 Current reduction factors

| | | | | | | | | | | |
|------------------------------------|------|------|------|------|------|------|------|------|------|------|
| 周囲温度 / Ambient temperature (°C) | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 |
| 電流減少係数 / Current reduction factors | 1.00 | 0.95 | 0.89 | 0.84 | 0.77 | 0.71 | 0.63 | 0.55 | 0.45 | 0.32 |

KQC-16

UL AWM

UL AWM

NFPA70
NFPA79

cUL/CSA

CE

CCC

TR-CU