

# SUNLIGHT SX LF

## Shielded multipurpose twisted pair type instrumentation cable

- Heat resistance ★★★★★
  - Oil resistance ★★★★★
  - Noise resistance ★★★★★
  - Flame resistance ★★★★★
  - Flexibility ★★★★★
  - non-migratory ★★★★★
  - Transport property ★
- ※The characteristic is an aim.

>>> Meeting standard



| Certification       | UL AWM                | cUL AWM              |
|---------------------|-----------------------|----------------------|
| Applicable standard | UL 758                | CSA C22.2 No.210     |
| Official symbol     | UL STYLE 2936         | CSA AWM IIA          |
| Voltage rating      | 150V                  | 150V                 |
| Temperature rating  | 80°C                  | 80°C                 |
| Conductor           | UL 758                | CSA C22.2 No.210     |
| Flame rating        | 1P/FT2<br>2P~50P/VW-1 | 1P/FT2<br>2P~50P/FT1 |

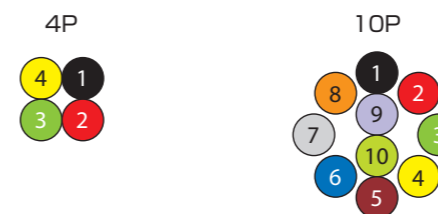
### > Application

- Cable for a terminal equipment, metering equipment, communications equipment, the internal wiring of every other electrons, electric apparatuses.
- Oil, flexibility, use of shielded. Cable for RS232C.
- UL and cUL AWM at 150V, 80°C. (Category : AVL2, AVL8).

### > Feature

- Heat resistant PVC for insulation.
- Oil, heat, flame retardant and soft PVC for sheath.
- Sheath material is non-migratory against ABS and PS resin.
- Chemical, water, abrasion, cold resistance PVC for sheath.
- Flame resisting : UL VW-1, cUL FT1. (1P: FT2)
- With drain wire.

### > Identification



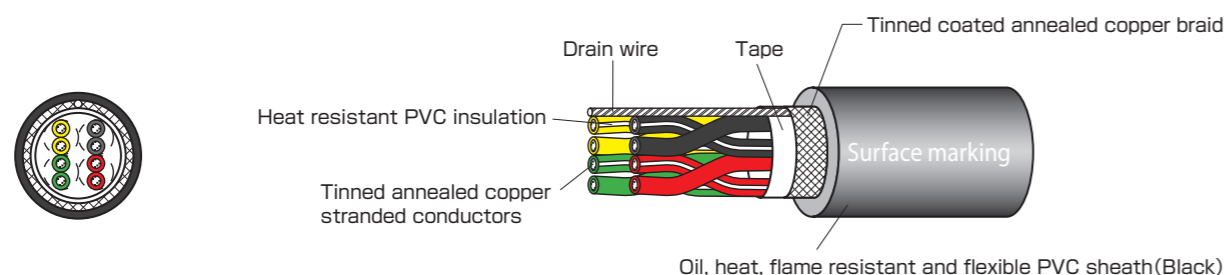
Figures in ○ indicate pair number in the identification table.

#### ● Identification table

| Pair number    | 1             | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10            |
|----------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| No.1 kind line | Black         | Red          | Green        | Yellow       | Brown        | Blue         | Gray         | Orange       | Purple       | Bright Green  |
| No.2 kind line | White/Black   | White/Red    | White/Green  | White/Yellow | White/Brown  | White/Blue   | White/Gray   | White/Orange | White/Purple | White/B Green |
| Pair number    | 11            | 12           | 13           | 14           | 15           | 16           | 17           | 18           | 19           | 20            |
| No.1 kind line | Peach         | Sky          | White        | Black/Green  | Black/Yellow | Black/Brown  | Black/Blue   | Black/Gray   | Black/Orange | Black/Purple  |
| No.2 kind line | White/Peach   | White/Sky    | Black/White  | Red/Green    | Red/Yellow   | Red/Brown    | Red/Blue     | Red/Gray     | Red/Orange   | Red/Purple    |
| Pair number    | 21            | 22           | 23           | 24           | 25           | 26           | 27           | 28           | 29           | 30            |
| No.1 kind line | Black/Grass   | Black/Peach  | Black/Sky    | Black/Red    | Green/Black  | Green/White  | Green/Brown  | Green/Blue   | Green/Gray   | Green/Orange  |
| No.2 kind line | Red/Grass     | Red/Peach    | Red/Sky      | Green/Red    | Yellow/Black | Yellow/White | Yellow/Brown | Yellow/Blue  | Yellow/Gray  | Yellow/Orange |
| Pair number    | 31            | 32           | 33           | 34           | 35           | 36           | 37           | 38           | 39           | 40            |
| No.1 kind line | Green/Purple  | Green/Grass  | Green/Peach  | Green/Sky    | Brown/Black  | Brown/White  | Brown/Red    | Brown/Green  | Brown/Yellow | Brown/Gray    |
| No.2 kind line | Yellow/Purple | Yellow/Grass | Yellow/Peach | Yellow/Sky   | Blue/Black   | Blue/White   | Blue/Red     | Blue/Green   | Blue/Yellow  | Blue/Gray     |
| Pair number    | 41            | 42           | 43           | 44           | 45           | 46           | 47           | 48           | 49           | 50            |
| No.1 kind line | Brown/Orange  | Brown/Purple | Brown/Grass  | Brown/Peach  | Brown/Sky    | Gray/Black   | Gray/White   | Gray/Red     | Gray/Green   | Gray/Yellow   |
| No.2 kind line | Blue/Orange   | Blue/Purple  | Blue/Grass   | Blue/Peach   | Blue/Sky     | Orange/Black | Orange/White | Orange/Red   | Orange/Green | Orange/Yellow |

White/Black indicates black core with white stripe.

### > Construction figure



※Has arranged insulation cores and drain wire of an equal size.

### > Standard sales length

100m  
(Sale by cutting short length is available Min.5 pairs.)

### > Surface marking

(1) 1 pair cables

SUNLIGHT SX □□AWG(○○) E67647 AWM 2936 80°C 150V FT2 AWM IIA 80°C 150V FT2 TAIYO LF R15

(2) 2pair~50pair cables

SUNLIGHT SX □□AWG(○○) E67647 AWM 2936 80°C 150V VW-1 AWM IIA 80°C 150V FT1 TAIYO LF R15

※R15 indicates "Compliant with RoHS Directive 2011/65/EU and Directive (EU) 2015/863 (10 substances)".

# SUNLIGHT SX LF

Shielded multipurpose twisted pair type instrumentation cable



## > Construction table

| No. of pairs | Conductor  |                        |                       | Heat-resistant PVC insulation |                       | Oil heat flame-resistant flexible PVC sheath |                               | Approx. weight (lbs/1000ft) (kg/km) | Electrical Characteristics      |                                  |                               | Allowable ampacity (A) |      |     |
|--------------|------------|------------------------|-----------------------|-------------------------------|-----------------------|--|-------------------------------|-------------------------------------|---------------------------------|----------------------------------|-------------------------------|------------------------|------|-----|
|              | Size (AWG) | Construction (Line/mm) | Outside diameter (mm) | Outside diameter (inch)       | Outside diameter (mm) | Overall diameter approx. (inch)              | Overall diameter approx. (mm) |                                     | Conductor resistance (Ω/km20°C) | Insulation resistance (MΩkm20°C) | Electrical strength (V/1min.) |                        |      |     |
| 1P           |            |                        |                       |                               |                       |  |                               | 0.150                               | 3.8                             | 15(22)                           |                               | 5.6                    |      |     |
| 2P           |            |                        |                       |                               |                       |  |                               | 0.213                               | 5.4                             | 28(41)                           |                               | 4.6                    |      |     |
| 3P           |            |                        |                       |                               |                       |  |                               | 0.224                               | 5.7                             | 32(47)                           |                               | 3.9                    |      |     |
| 4P           |            |                        |                       |                               |                       |  |                               | 0.248                               | 6.3                             | 37(55)                           |                               | 3.5                    |      |     |
| 5P           |            |                        |                       |                               |                       |  |                               | 0.260                               | 6.6                             | 44(65)                           |                               | 3.2                    |      |     |
| 6P           |            |                        |                       |                               |                       |  |                               | 0.295                               | 7.5                             | 54(80)                           |                               | 3.1                    |      |     |
| 7P           |            |                        |                       |                               |                       |  |                               | 0.295                               | 7.5                             | 57(85)                           |                               | 2.9                    |      |     |
| 8P           |            |                        |                       |                               |                       |  |                               | 0.315                               | 8.0                             | 64(95)                           |                               | 2.8                    |      |     |
| 10P          | 25 (0.2mm) | 7/0.18 (7/7.1mil)      | 0.54 (21mil)          | 0.042                         | 1.06                  |  |                               | 0.350                               | 8.9                             | 74(110)                          | less than 113                 | more than 50           | 1500 | 2.6 |
| 12P          |            |                        |                       |                               |                       |  |                               | 0.374                               | 9.5                             | 87(130)                          |                               |                        |      | 2.4 |
| 13P          |            |                        |                       |                               |                       |  |                               | 0.390                               | 9.9                             | 91(135)                          |                               |                        |      | 2.4 |
| 15P          |            |                        |                       |                               |                       |  |                               | 0.398                               | 10.1                            | 101(150)                         |                               |                        |      | 2.2 |
| 18P          |            |                        |                       |                               |                       |  |                               | 0.437                               | 11.1                            | 118(175)                         |                               |                        |      | 2.1 |
| 20P          |            |                        |                       |                               |                       |  |                               | 0.453                               | 11.5                            | 128(190)                         |                               |                        |      | 2.0 |
| 25P          |            |                        |                       |                               |                       |  |                               | 0.492                               | 12.5                            | 155(230)                         |                               |                        |      | 1.9 |
| ○ 30P        |            |                        |                       |                               |                       |  |                               | 0.539                               | 13.7                            | 181(270)                         |                               |                        |      | 1.8 |
| ○ 40P        |            |                        |                       |                               |                       |  |                               | 0.602                               | 15.3                            | 232(345)                         |                               |                        |      | 1.6 |
| ○ 50P        |            |                        |                       |                               |                       |  |                               | 0.673                               | 17.1                            | 279(415)                         |                               |                        |      | 1.5 |
| 1P           |            |                        |                       |                               |                       |  |                               | 0.177                               | 4.5                             | 22(32)                           |                               |                        |      | 7.8 |
| 2P           |            |                        |                       |                               |                       |  |                               | 0.252                               | 6.4                             | 37(55)                           |                               |                        |      | 6.4 |
| 3P           |            |                        |                       |                               |                       |  |                               | 0.287                               | 7.3                             | 50(75)                           |                               |                        |      | 5.6 |
| 4P           |            |                        |                       |                               |                       |  |                               | 0.307                               | 7.8                             | 57(85)                           |                               |                        |      | 5.0 |
| 5P           |            |                        |                       |                               |                       |  |                               | 0.335                               | 8.5                             | 67(100)                          |                               |                        |      | 4.7 |
| 6P           |            |                        |                       |                               |                       |  |                               | 0.366                               | 9.3                             | 77(115)                          |                               |                        |      | 4.4 |
| 7P           |            |                        |                       |                               |                       |  |                               | 0.366                               | 9.3                             | 84(125)                          |                               |                        |      | 4.1 |
| 8P           |            |                        |                       |                               |                       |  |                               | 0.394                               | 10.0                            | 94(140)                          |                               |                        |      | 3.9 |
| 10P          | 23 (0.3mm) | 12/0.18 (12/7.1mil)    | 0.7 (28mil)           | 0.051                         | 1.3                   |  |                               | 0.437                               | 11.1                            | 114(170)                         | less than 66.3                | more than 50           | 1500 | 3.7 |
| 12P          |            |                        |                       |                               |                       |  |                               | 0.469                               | 11.9                            | 131(195)                         |                               |                        |      | 3.5 |
| ○ 13P        |            |                        |                       |                               |                       |  |                               | 0.492                               | 12.5                            | 141(210)                         |                               |                        |      | 3.4 |
| 15P          |            |                        |                       |                               |                       |  |                               | 0.504                               | 12.8                            | 155(230)                         |                               |                        |      | 3.2 |
| 18P          |            |                        |                       |                               |                       |  |                               | 0.547                               | 13.9                            | 181(270)                         |                               |                        |      | 3.0 |
| 20P          |            |                        |                       |                               |                       |  |                               | 0.571                               | 14.5                            | 195(290)                         |                               |                        |      | 2.9 |
| 25P          |            |                        |                       |                               |                       |  |                               | 0.622                               | 15.8                            | 235(350)                         |                               |                        |      | 2.7 |
| 30P          |            |                        |                       |                               |                       |  |                               | 0.669                               | 17.0                            | 272(405)                         |                               |                        |      | 2.5 |
| ○ 40P        |            |                        |                       |                               |                       |  |                               | 0.752                               | 19.1                            | 346(515)                         |                               |                        |      | 2.3 |
| ○ 50P        |            |                        |                       |                               |                       |  |                               | 0.858                               | 21.8                            | 433(645)                         |                               |                        |      | 2.1 |
| 1P           |            |                        |                       |                               |                       |  |                               | 0.193                               | 4.9                             | 28(41)                           |                               |                        |      | 10  |
| 2P           |            |                        |                       |                               |                       |  |                               | 0.283                               | 7.2                             | 50(75)                           |                               |                        |      | 8.7 |
| 3P           |            |                        |                       |                               |                       |  |                               | 0.303                               | 7.7                             | 60(90)                           |                               |                        |      | 7.4 |
| 4P           |            |                        |                       |                               |                       |  |                               | 0.327                               | 8.3                             | 74(110)                          |                               |                        |      | 6.6 |
| 5P           |            |                        |                       |                               |                       |  |                               | 0.362                               | 9.2                             | 87(130)                          |                               |                        |      | 6.2 |
| 6P           |            |                        |                       |                               |                       |  |                               | 0.390                               | 9.9                             | 104(155)                         |                               |                        |      | 5.9 |
| 7P           |            |                        |                       |                               |                       |  |                               | 0.390                               | 9.9                             | 111(165)                         |                               |                        |      | 5.4 |
| 8P           |            |                        |                       |                               |                       |  |                               | 0.413                               | 10.5                            | 121(180)                         |                               |                        |      | 5.2 |
| 10P          | 21 (0.5mm) | 20/0.18 (20/7.1mil)    | 0.9 (35mil)           | 0.059                         | 1.5                   |  |                               | 0.484                               | 12.3                            | 151(225)                         | less than 39.8                | more than 50           | 1500 | 5.0 |
| 12P          |            |                        |                       |                               |                       |  |                               | 0.524                               | 13.3                            | 175(260)                         |                               |                        |      | 4.7 |
| ○ 13P        |            |                        |                       |                               |                       |  |                               | 0.547                               | 13.9                            | 188(280)                         |                               |                        |      | 4.6 |
| 15P          |            |                        |                       |                               |                       |  |                               | 0.559                               | 14.2                            | 208(310)                         |                               |                        |      | 4.3 |
| 18P          |            |                        |                       |                               |                       |  |                               | 0.610                               | 15.5                            | 245(365)                         |                               |                        |      | 4.1 |
| 20P          |            |                        |                       |                               |                       |  |                               | 0.646                               | 16.4                            | 272(405)                         |                               |                        |      | 4.0 |
| 25P          |            |                        |                       |                               |                       |  |                               | 0.693                               | 17.6                            | 323(480)                         |                               |                        |      | 3.6 |
| 30P          |            |                        |                       |                               |                       |  |                               | 0.752                               | 19.1                            | 376(560)                         |                               |                        |      | 3.4 |
| ○ 40P        |            |                        |                       |                               |                       |  |                               | 0.850                               | 21.6                            | 491(730)                         |                               |                        |      | 3.1 |
| ○ 50P        |            |                        |                       |                               |                       |  |                               | 0.957                               | 24.3                            | 598(890)                         |                               |                        |      | 2.9 |

○ : Indicates make-to-order products.

※The size indicated within parenthesis in the above table, describes the appropriate size of Japanese domestic use.

## > Allowable Ampacity

The allowable ampacity of this catalog is a value at one in the air construction and the ambient temperature 30°C.

Allowable ampacity is calculated based on JCS0168.

Please multiply the following correction coefficient by the ambient temperature.

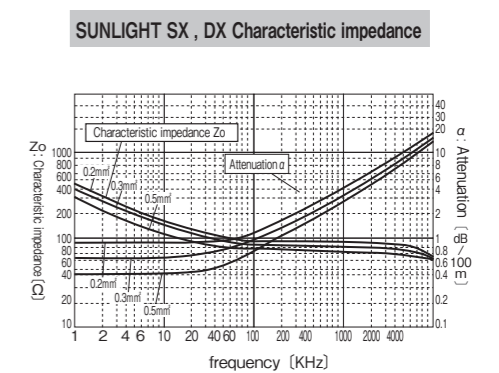
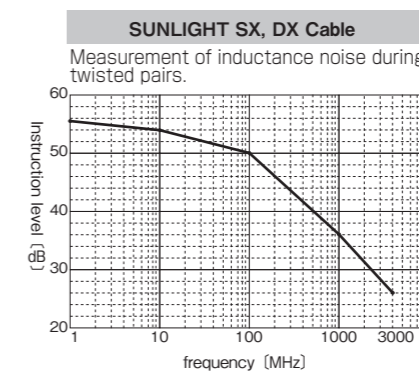
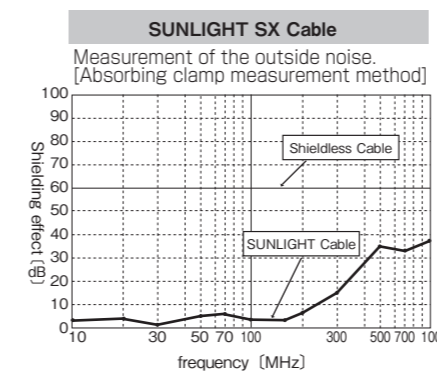
● Adjustment factors (at ambient temperature)

| Ambient temperature (°C) | 30   | 40   | 50   | 60   | 70   | 80 | 90 | 100 |
|--------------------------|------|------|------|------|------|----|----|-----|
| Adjustment factors       | 1.00 | 0.89 | 0.77 | 0.63 | 0.45 | —  | —  | —   |

## > Electrical property

Capacitance, Characteristic impedance and Delay time are a reference value, not the guarantee value.

| Size (mm <sup>2</sup> )  | Conductor resistance (20°C Ω/km) | Dielectric withstand voltage (V/min.) | Conductor resistance (20°C MΩ-km) | Capacitance (1kHz approx. nF/km) | Characteristic impedance (10MHz approx. Ω) | Delay time (approx. ns/m) |
|--------------------------|----------------------------------|---------------------------------------|-----------------------------------|----------------------------------|--|---------------------------|
| 25 (0.2mm <sup>2</sup> ) | less than 113                    | 1500                                  | more than 50                      | 110                              | 70   | 6                         |
| 23 (0.3mm <sup>2</sup> ) | less than 66.3                   | 1500                                  | more than 50                      | 110                              | 70   | 6                         |
| 21 (0.5mm <sup>2</sup> ) | less than 39.8                   | 1500                                  | more than 50                      | 110                              | 70   | 6                         |



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