

EXT-3D/CL3X/2586 600V LF

Electronic equipment robot cable

| | |
|------------------------|-------|
| Heat resistance | ★★★★★ |
| Oil resistance | ★★★★★ |
| Noise resistance | ★ |
| Flame resistance | ★★★★★ |
| Torsion resistance | ★★★★★ |
| Flexibility resistance | ★★★★★ |
| Cable carrier | ★★★★★ |

*The characteristic is an aim.

>>> Meeting standard



| Certification | EXT-3D LF | | |
|---------------------|-----------|---------------|------------------|
| | UL CL3X | UL AWM | cUL AWM |
| Applicable standard | UL13 | UL758 | CSA C22.2 No.210 |
| Official symbol | CL3X | UL STYLE 2586 | CSA AWM II/A/B |
| Voltage rating | 300V | 600V | 600V |
| Temperature rating | 105°C | 105°C | 105°C |
| Conductor | UL13 | UL758 | CSA C22.2 No.210 |
| Flame rating | VW-1 | VW-1 | FT1 |

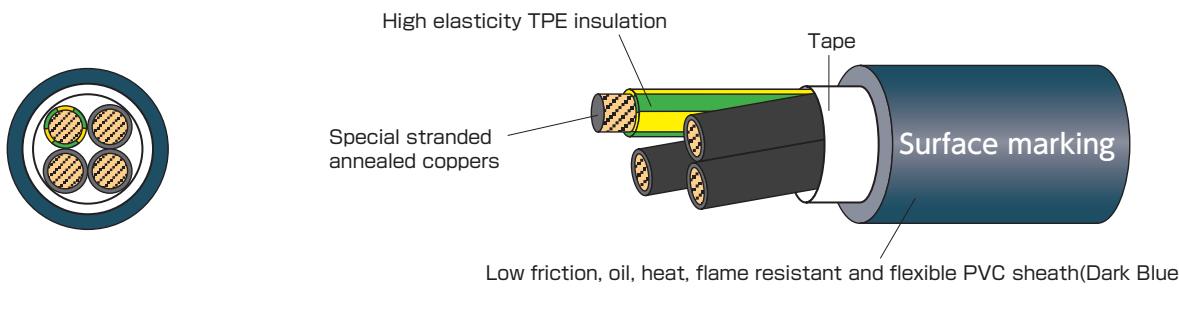
> Application

- Appropriate wiring for multi-joint unit portion. (Twist test 20 million times or more.)
- Appropriate for drag chain wiring for high-speed moving. (Drag chain test 20 million times or more.)
- CL3X that is the listing standard is acquired and it corresponds to NFPA70,79.
- Robot cable with UL and cUL at 600V, 105°C. (Category : AVLV2, AVLV8, QPTZ)

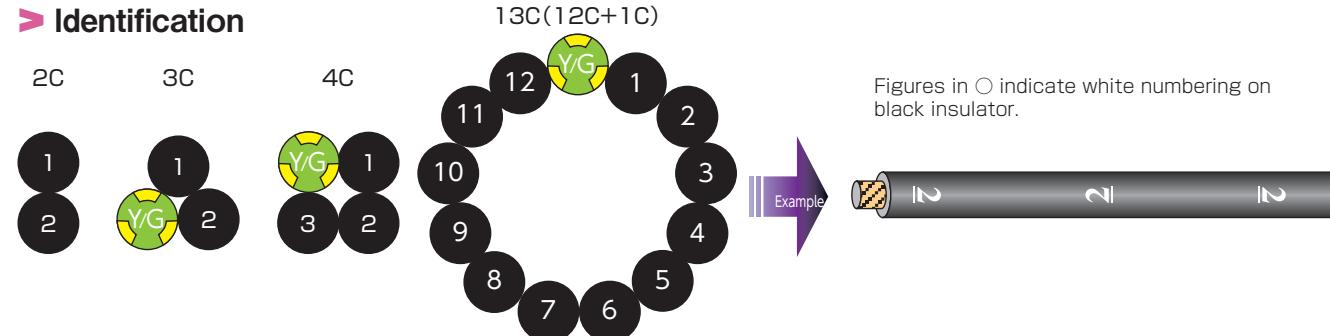
> Feature

- Extremely fine conductor use.
- High bending elasticity and heat resistant TPE is used for insulation.
- Oil and heat resistant PVC used for sheath.
- Low friction material used for sheath.
- Flame resisting : UL VW-1, cUL FT1.
- IP67 Certification (ISO14644-1 Air Cleanliness)
Uses materials equivalent to the Class 1 certified size.

> Construction figure



> Identification



*Y/G indicates green core with yellow stripe (30~50%).

> Surface marking

TAIYO EXT-3D □ AWG LF R15 E242171 (UL) CL3X 105°C □ AWG or AWM 2586 105°C 600V VW-1 cUL AWM II/A/B 105°C 600V FT1

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

> Construction table

| No. of cores | Conductor | | High elasticity TPE insulation | | Low friction, 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) | Overall diameter approx. (inch) | Overall diameter approx. (mm) | | Conductor resistance (Ω/km20°C) | Insulation resistance (MΩ/km20°C) | Electrical strength (V/1min.) | |
| 2C | | | | | 0.224 | 5.7 | 30(44) | | | | 12 |
| 3C | | | | | 0.236 | 6.0 | 37(55) | | | | 12 |
| 4C | | | | | 0.256 | 6.5 | 44(65) | | | | 11 |
| 6C+1C | 18 (0.823mm ²) | 168/0.08 (168/3.2mil) | 1.31 (52mil) | 0.075 | 1.91 | 0.354 | 9.0 | 94(140) | less than 22.3 | more than 100 | 2000 |
| 8C+1C | | | | | | 0.402 | 10.2 | 118(175) | | | 8.2 |
| 10C+1C | | | | | | 0.453 | 11.5 | 141(210) | | | 7.7 |
| 12C+1C | | | | | | 0.500 | 12.7 | 165(245) | | | 7.3 |
| 2C | | | | | | 0.252 | 6.4 | 40(60) | | | 17 |
| 3C | | | | | | 0.264 | 6.7 | 50(75) | | | 17 |
| 4C | 16 (1.30mm ²) | 266/0.08 (266/3.2mil) | 1.64 (65mil) | 0.088 | 2.24 | 0.287 | 7.3 | 64(95) | less than 13.9 | more than 100 | 2000 |
| 6C+1C | | | | | | 0.394 | 10.0 | 114(170) | | | 11 |
| 10C+1C | | | | | | 0.508 | 12.9 | 178(265) | | | 10 |
| 12C+1C | | | | | | 0.571 | 14.5 | 218(325) | | | 9.8 |
| 2C | | | | | | 0.291 | 7.4 | 54(80) | | | 23 |
| 3C | | | | | | 0.311 | 7.9 | 71(105) | less than 8.77 | more than 100 | 2000 |
| 4C | 14 (2.08mm ²) | 420/0.08 (420/3.2mil) | 2.07 (81mil) | 0.109 | 2.77 | 0.354 | 9.0 | 94(140) | | | 20 |
| 6C+1C | | | | | | 0.461 | 11.7 | 161(240) | | | 16 |

*Core number mark "+1C" has the [Y/G] earth cable of 14AWG size.

*3,4 core has the [Y/G] earth cable of an equal size.

*The test of 2000V/5 minute besides the withstand voltage test on above mentioned UL standard and the CSA standard is applied.

> 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.

Allowable ampacity is calculated excluding grounding conductor.

Please multiply the following adjustment factors by the ambient temperature.

Note) Please refer to P.270 when you use this cable according to NFPA70 or NFPA79.

> Adjustment factors (at ambient temperature)

| Ambient temperature (°C) | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|--------------------------|------|------|------|------|------|------|------|------|
| Adjustment factors | 1.00 | 0.93 | 0.86 | 0.77 | 0.68 | 0.58 | 0.45 | 0.26 |

> Movement characteristic

| *)1 Rotary bending | Bending | U-shaped turn-back | 90° bending | Twist | | *)2 Move bending |
|-----------------------|---------|--------------------|-------------|----------|---------|---------------------|
| | | | | Straight | Bending | |
| A | A | S | A | S | A | C |

Examination's time:
 S= More than 20 million times C= More than 3 million times
 A= More than 10 million times D= More than 1 million times
 B= More than 5 million times E= More than 0.5 million times

*)1 It is C when overall diameter of the cable is 20mm or more, and D when overall diameter of the cable is 30mm or more.

*)2 When overall diameter of the cable is 20mm or less.

*The longevity of the cable inside a cable bearing is dependent on the travel distance.
Please consult our Sales Department when wiring a travel distance of 5m or greater.

> Oil resistance

| Insulating oil | Lubricating oil | Cutting oil I | Cutting oil II | Hydraulic oil | Grease |
|----------------|-----------------|---------------|----------------|---------------|--------|
| A | A | B | B | B | B |

*A~C in the table indicate the characteristics below.

A:There is no problem on practical use at all.

B:Deterioration slightly no problem almost on practical use.

C:It is sometimes deteriorated to some degree, and not possible to use it.

> Standard sales length

100m

(Sales by short length is available for large sizes. Please contact us which sizes are available.)