

# EXT-3D/CL3X/2586 600V LF

- Heat resistance ★★★★★
  - Oil resistance ★★★★★
  - Noise resistance ★
  - Flame resistance ★★★★★
  - Torsion resistance ★★★★★★
  - Flexibility resistance ★★★★★
  - Cable carrier ★★★★★★
- ※The characteristic is an aim.

>>> Meeting standard



## Electronic equipment robot cable

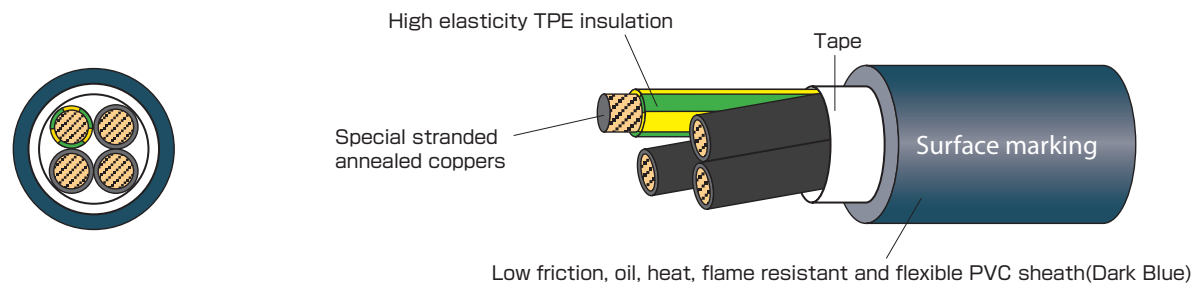
### > Application

- Appropriate wiring for multi-joint unit portion. (Twist test 20 million times or more.)
- Appropriate for cable chain wiring for high-speed moving. (Cable 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)

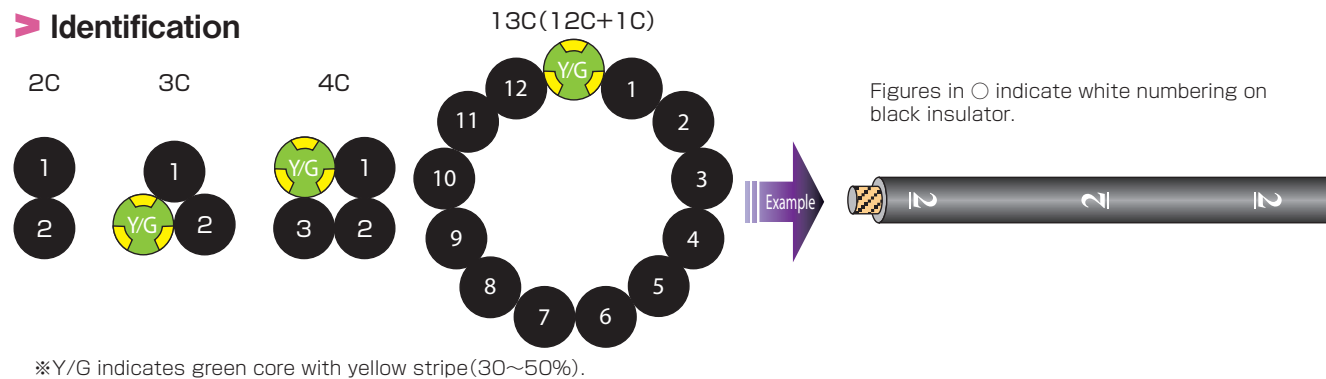
### > Feature

- 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.

### > Construction figure



### > Identification



### > Surface marking

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

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

| 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              |

### > 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)        | Outside diameter (mm) | Overall diameter approx. (inch)                              | Overall diameter approx. (mm) |                                     | Conductor resistance (Ω/km20°C) | Insulation resistance (MΩkm20°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) | 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                          | 9.0                    |
| 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           |              |                        |                       |                                |                       | 0.287  | 7.3                           | 64(95)                              |                                 |                                  |                               | 14                     |
| 6C+1C        | 16 (1.30mm)  | 266/0.08 (266/3.2mil)  | 1.64 (65mil)          | 0.088                          | 2.24                  | 0.394  | 10.0                          | 114(170)                            | less than 13.9                  | more than 100                    | 2000                          | 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)                             |                                 |                                  |                               | 23                     |
| 4C           | 14 (2.08mm)  | 420/0.08 (420/3.2mil)  | 2.07 (81mil)          | 0.109                          | 2.77                  | 0.354  | 9.0                           | 94(140)                             | less than 8.77                  | more than 100                    | 2000                          | 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.278 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 Bending | Bend | 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  
 A= More than 10 million times  
 B= More than 5 million times  
 C= More than 3 million times  
 D= More than 1 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.)