

EXT-PREM/CMX/2517 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	UL CMX	cUL CMH	UL AWM	cUL AWM
Applicable standard	UL 444	CSA C22.2 No.214	UL 758	CSA C22.2 No.210
Official symbol	CMX	CMH	UL STYLE 2517	CSA AWM II A/B
Voltage rating	300V	300V	300V	300V
Temperature rating	105°C	105°C	105°C	105°C
Conductor	UL 444	CSA C22.2 No.214	UL 758	CSA C22.2 No.210
Flame rating	VW-1	FT1	VW-1	FT1



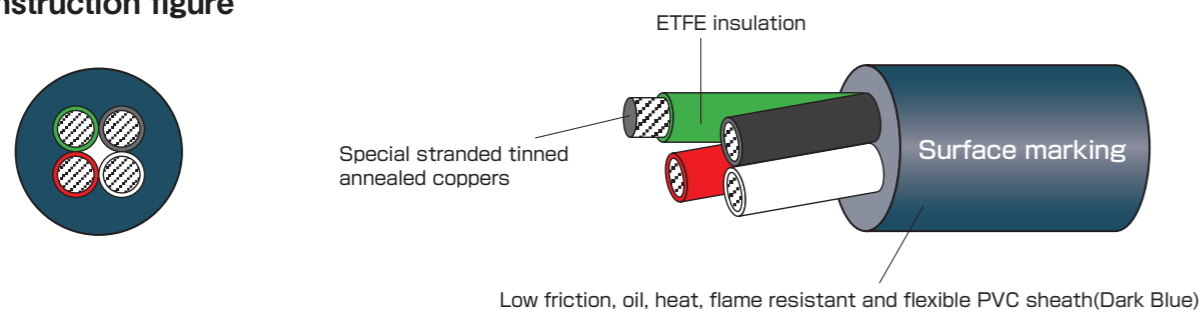
> Application

- Appropriate wiring for multi-joint unit portion. (Twist test 40 million times or more.)
- Appropriate for cable chain wiring for high-speed moving. (Cable chain test 50 million times or more.)
- CMX that is the listing standard is acquired and it corresponds to NFPA70,79.
- Robot cable with UL and cUL at 300V, 105°C. (Category : AVLV2, AVLV8, DUZX, DUZX7)

> Feature

- Tinned annealed copper superfine conductor use.
- Fluorine resin(ETFE) 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.
- Coolant resistant.

> Construction figure



※Cable with more than 10 cores : binder tape on cores.

> Surface marking



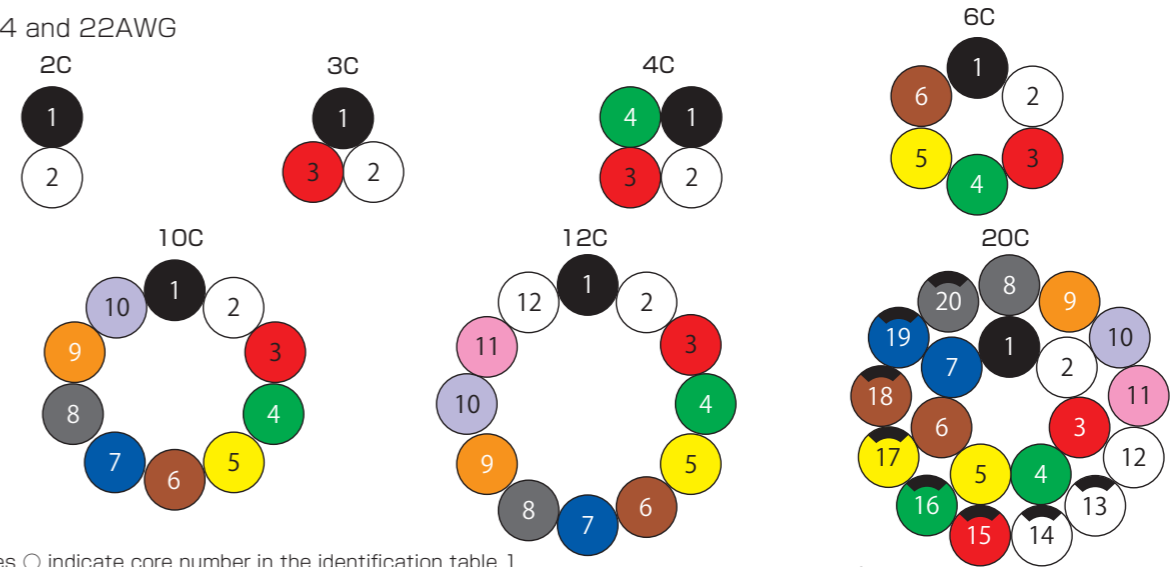
※R15 indicates "Compliant with RoHS Directive 2011/65/EU and Directive (EU) 2015/863 (10 substances)".

> Standard sales length

Make-to-order products.
(Depending on size, it is in stock. Please contact us which sizes are available.)

> Identification

· For 24 and 22AWG



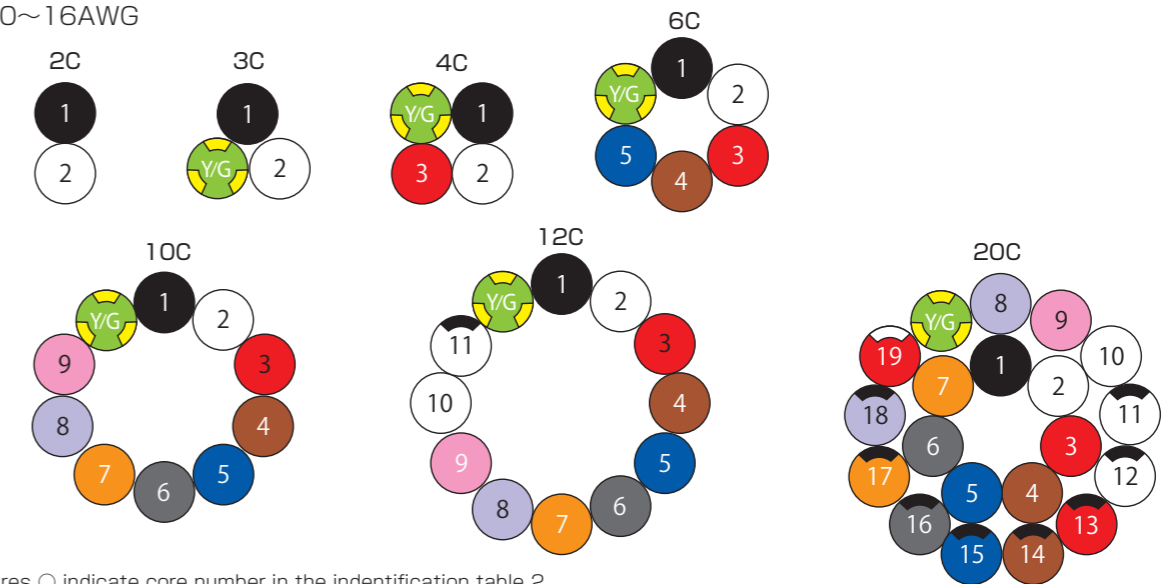
Figures ○ indicate core number in the identification table 1.

● Identification table 1

Pair number	1	2	3	4	5	6	7	8	9	10
Line Color	Black	White	Red	Green	Yellow	Brown	Blue	Gray	Orange	Purple
Pair number	11	12	13	14	15	16	17	18	19	20
Line Color	Peach	Natural color	B/N.C.	B/W	B/R	B/G	B/Y	B/Brown	B/Blue	B/G

※Black/White indicates white core with black stripe.

· For 20~16AWG



Figures ○ indicate core number in the identification table 2.

● Identification table 2

Pair number	1	2	3	4	5	6	7	8	9	10
Line Color	Black	White	Red	Brown	Blue	Gray	Orange	Purple	Pink	Natural color
Pair number	11	12	13	14	15	16	17	18	19	
Line Color	B/N.C.	B/W	B/R	B/Brown	B/Blue	B/G	B/O	B/P	W/R	

※Y/G indicates green core with yellow stripe(30%~50%).
※Black/White indicates white core with black stripe.

EXT-PREM/CMX/2517 LF

>>> Meeting standard



Electronic equipment robot cable

> Construction table

No. of cores	Conductor			ETFE 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						0.157	4.0	14(21)				5.9
3C						0.161	4.1	16(24)				4.9
4C						0.173	4.4	19(28)				4.4
6C	24	42/0.08	0.68	0.043	1.08	0.205	5.2	27(40)	less than 105	more than 100	2000	3.9
10C	(0.204mil)	(42/3.2mil)	(27mil)			0.268	6.8	40(60)				3.4
12C						0.303	7.7	50(75)				3.2
20C						0.319	8.1	67(100)				2.5
2C						0.169	4.3	17(26)				7.7
3C						0.177	4.5	21(31)				7.0
4C						0.201	5.1	27(40)				6.5
6C	22	70/0.08	0.87	0.050	1.27	0.228	5.8	37(55)	less than 57.5	more than 100	2000	5.6
10C	(0.324mil)	(70/3.2mil)	(34mil)			0.307	7.8	57(85)				4.9
12C						0.339	8.6	67(100)				4.6
20C						0.358	9.1	94(140)				3.7
2C						0.205	5.2	26(39)				11
3C						0.217	5.5	32(47)				9.1
4C						0.232	5.9	37(55)				8.4
6C	20	112/0.08	1.11	0.063	1.61	0.268	6.8	50(75)	less than 36.2	more than 100	2000	7.0
10C	(0.518mil)	(112/3.2mil)	(44mil)			0.370	9.4	87(130)				6.6
12C						0.409	10.4	108(160)				6.3
20C						0.437	11.1	141(210)				5.0
2C						0.232	5.9	34(50)				14
3C	18	168/0.08	1.36	0.077	1.96	0.244	6.2	44(65)	less than 24.0	more than 100	2000	11
4C	(0.823mil)	(168/3.2mil)	(54mil)			0.264	6.7	50(75)				12
6C						0.319	8.1	74(110)				9.8
2C						0.264	6.7	47(70)				18
3C	16	280/0.08	1.75	0.093	2.35	0.287	7.3	60(90)	less than 15.5	more than 100	2000	16
4C	(1.30mil)	(280/3.2mil)	(69mil)			0.311	7.9	77(115)				14
6C						0.374	9.5	111(165)				13

※20AWG and 3C or more cores has the [Y/G] ground core of an equal size.

> 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 NFPA 70.

●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	*) 2 U-shaped turn-back	90° bending	Twist		*) 3 Move bending
				Straight	Bending	
A	A	SS	A	S	A	C

Examination's time:
 SS= More than 50 million times B= More than 5 million times
 S= More than 20 million times C= More than 3 million times
 A= More than 10 million times D= More than 1 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 Our original test showed that no case of wire breakage could be detected for EXT-PREM-SB/CMX/2517 5PX24AWG even after **100 million cycles**.

*) 3 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.