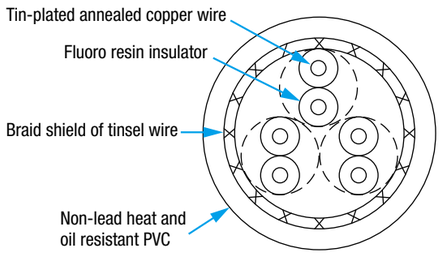
UL2464-SX (FA-TWT), UL2570-SX (FA-TWT)

Conformity standard **UL 758**

*Photo of UL2464-SX (FA)



Example of cable structure

Features

- Enhanced twisting resistance by devising the proper cable stranding pitch.
- Can handle specified heat resistance up to 105°C.

Use

- Power supply and signal transmission for robots and machine tools where twisting resistance is specifically required

Twisting times	UL2464-SX (FA-TWT) 12PX25AWG	
	Conductor resistance (Ω)	Comparison with initial value (%)
Initial value	8.012	—
1000k	7.998	−0.2
2000k	8.159	1.8
3000k	8.144	1.6
4000k	8.159	1.8
5000k	8.121	1.4
6560k	8.154	1.8
Result	**No damage**	

About 6.56 million times of twisting resistance

*Test conditions
①Twisting angle: ±180°
②Twisting speed: 30 times/min
③ Twisting interval: 245 mm

Twisting test data

*The values shown above are not guaranteed values, but actual measurements.

Characteristics

- Rating temperature: 80°C
- Rating voltage: 300 V (UL2464) 600 V (UL2570)
- Withstand voltage: 2,000 VAC/5 min
- Min. insulating resistance (at 20°C): 1,000 MΩ-km

U-shape bending · ±90° bending · Twisting · UL conformity · RoHS conformity

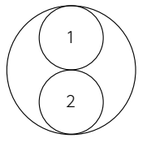
Wire core identification

Multiple pair type

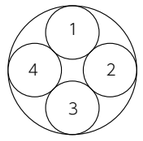
Pair No.	Insulator color		Pair No.	Insulator color	
	Wire core No. 1	Wire core No. 2		Wire core No. 1	Wire core No. 2
1	Black	Brown	11	Brown	Orange
2	Black	Red	12	Brown	Yellow
3	Black	Orange	13	Brown	Green
4	Black	Yellow	14	Brown	Blue
5	Black	Green	15	Brown	Purple
6	Black	Blue	16	Brown	Gray
7	Black	Purple	17	Brown	White
8	Black	Gray	18	Red	Orange
9	Black	White	19	Red	Yellow
10	Brown	Red	20	Red	Green

Multiple core type

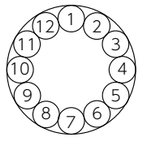
Wire core No.	Insulator color	Wire core No.	Insulator color
1	Black	11	Black
2	White	12	White
3	Red	13	Red
4	Green	14	Green
5	Yellow	15	Yellow
6	Brown	16	Brown
7	Blue	17	Blue
8	Orange	18	Orange
9	Gray	19	Gray
10	Purple	20	Purple



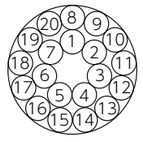
2 pairs or 2 cores



4 pairs or 4 cores



12 pairs or 12 cores



20 pairs or 20 cores

Cable structure and performance

Multiple pair type of UL2464-SX (FA-TWT)

Conductor			Insulator		Max. conductor resistance (at 20 °C) (Ω/km)	No. of pairs	Finished outer diameter (mm)	Approx. mass (kg/km)	Allowable current (A)
AWG size	Configuration (No./No./mm)	Outer diameter (mm)	Standard thickness (mm)	Outer diameter (mm)					
25 (0.2mm²)	40/0.08	0.58	0.2	0.98	105	2	6.6	44	5.4
						3	6.9	50	4.5
						4	7.4	60	4.0
						5	7.9	70	3.7
						6	8.3	75	3.5
						7	8.9	85	3.3
						8	9.4	100	3.2
						10	10.5	120	3.0
						12	12.0	145	2.8
						15	11.9	160	2.5
						20	13.1	195	2.3
23 (0.3mm²)	60/0.08	0.72		1.12	69.5	2	7.2	51	6.9
						3	7.5	60	5.8
						4	8.0	71	5.2
						5	8.6	85	4.7
						6	9.1	95	4.5
						7	9.7	110	4.2
						8	10.4	125	4.1
						10	12.0	155	3.8
						12	13.7	195	3.7
						15	13.5	210	3.2
						20	14.8	260	2.9

Multiple core type of UL2570-SX (FA-TWT)

Conductor			Insulator		Max. conductor resistance (at 20 °C) (Ω/km)	No. of wire cores	Finished outer diameter (mm)	Approx. mass (kg/km)	Allowable current (A)
AWG size	Configuration (No./No./mm)	Outer diameter (mm)	Standard thickness (mm)	Outer diameter (mm)					
20 (0.5mm²)	104/0.08	0.94	0.25	1.44	40.1	2	5.9	33	9.6
						3	6.2	41	8.1
						4	6.5	50	7.3
						5	6.9	58	6.7
						6	7.4	67	6.4
18 (0.75mm²)	7/24/0.08	1.25	0.28	1.81	25.0	2	6.7	45	13.0
						3	7.0	57	11.0
						4	7.4	70	9.9
						5	7.9	85	9.1
						6	8.5	100	8.6
16 (1.25mm²)	7/38/0.08	1.71	0.28	2.27	16.1	2	7.0	62	17.4
						3	7.3	80	14.7
						4	7.9	100	13.2
						5	8.6	120	12.3
						6	9.3	140	11.3
14 (2mm²)	7/60/0.08	2.15	0.36	2.87	10.2	2	8.2	89	23.4
						3	8.6	115	19.8
						4	9.4	145	17.9
						5	10.2	180	16.6
						6	11.1	210	15.8

*The above-mentioned structure is a representative example. For other sizes and combinations, contact our salesperson in charge.
*The allowable current in the table above is of a value at ambient temperature of 40°C for single line wiring in air.

Example of product designation

UL2464-SX (FA-TWT) 4P X 23AWG (60/0.08)

- SX: Additional designation for the case with a shield
- 4P: No. of pairs or wire cores
- 23AWG (60/0.08): Conductor size and configuration

Relation between bending life and twisting life

Bending life is improved with a narrower stranding pitch. ⟷ Twisting life is improved with a wider stranding pitch.

Bending and twisting characteristics are in a contradictory relationship. The TWT Series is designed with reference to the intersection of bending and twisting curves.

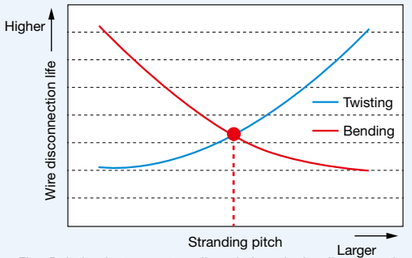


Fig.: Relation between stranding pitch and wire disconnection life